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FARM & FIRESIDE

The National Farm Magazine

JULY 1920

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Frederic Stanley

“To Every Farmer’s Son” — See page 15

Barrett Everlastic Roofings

Everlastic "Rubber" Roofing

A recognized standard among "rubber" roofings. Famous for its durability. Made of high-grade waterproofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions. Nails and cement with each roll.



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A high-grade roll roofing, surfaced with genuine slate, in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical for a barn or garage. Combines real protection with beauty. Nails and cement with each roll.

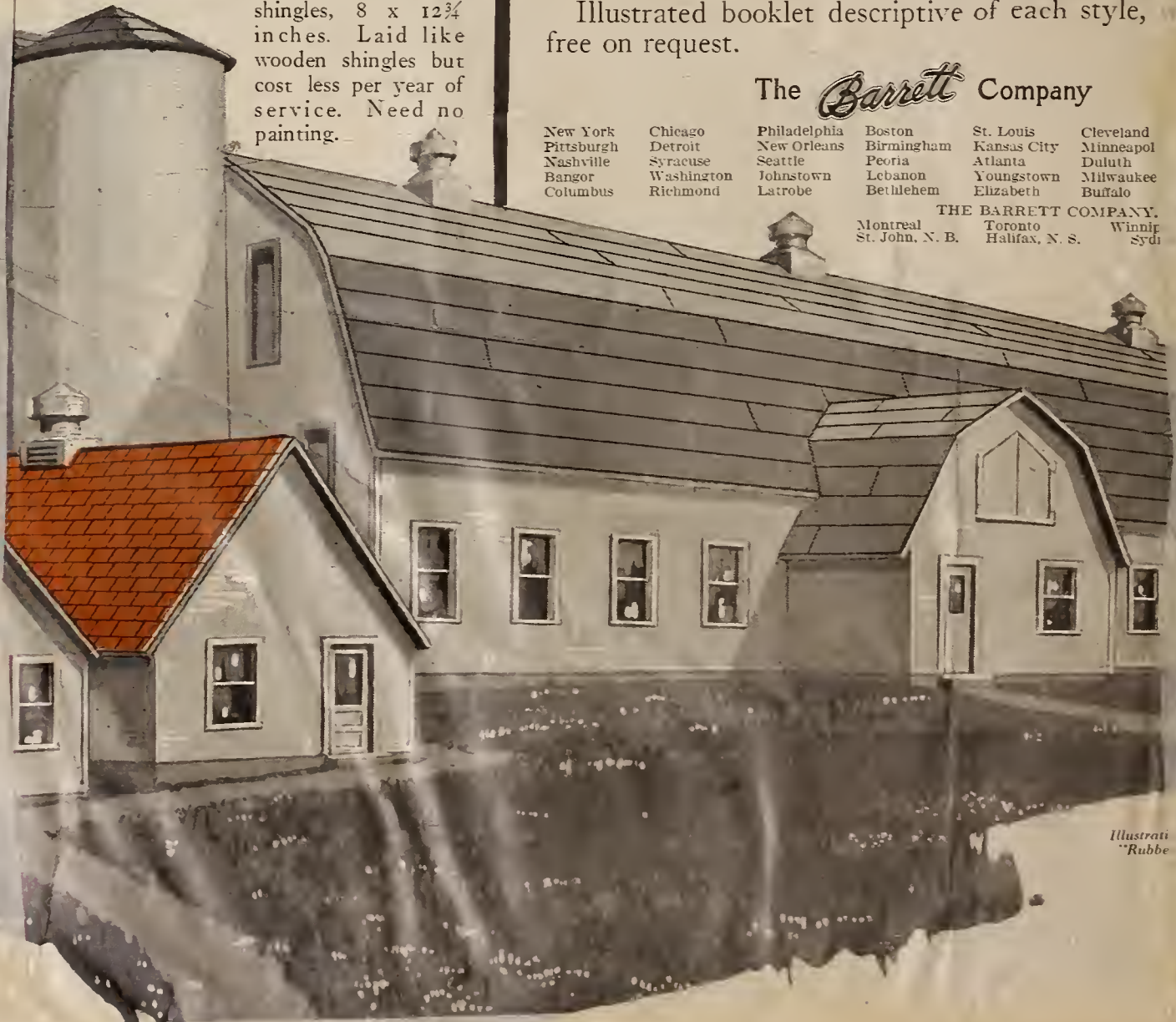
Everlastic Multi-Shingles (Four-Shingles-in-One)

Made of high-grade, thoroughly waterproofed felt and surfaced with crushed slate in two natural slate colors, red or green. Laid in four shingles in one at far less cost in labor and time than in shingles. Give you a roof of artistic beauty worthy of the best buildings, and one that resists fire and weather. Need no painting.



Everlastic Single Shingles

Made of the same durable slate-surfaced (red or green) material as the Multi-Shingles, but cut into individual shingles, 8 x 12 3/4 inches. Laid like wooden shingles but cost less per year of service. Need no painting.



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Everlastic Roofings are made by one of the largest and largest roofing manufacturers in the country. These roofings are backed by sixty years of "know-how."

Everlastic Roofings are suitable for every type of steep-roofed structure, from the most modest farm building to the finest residence.

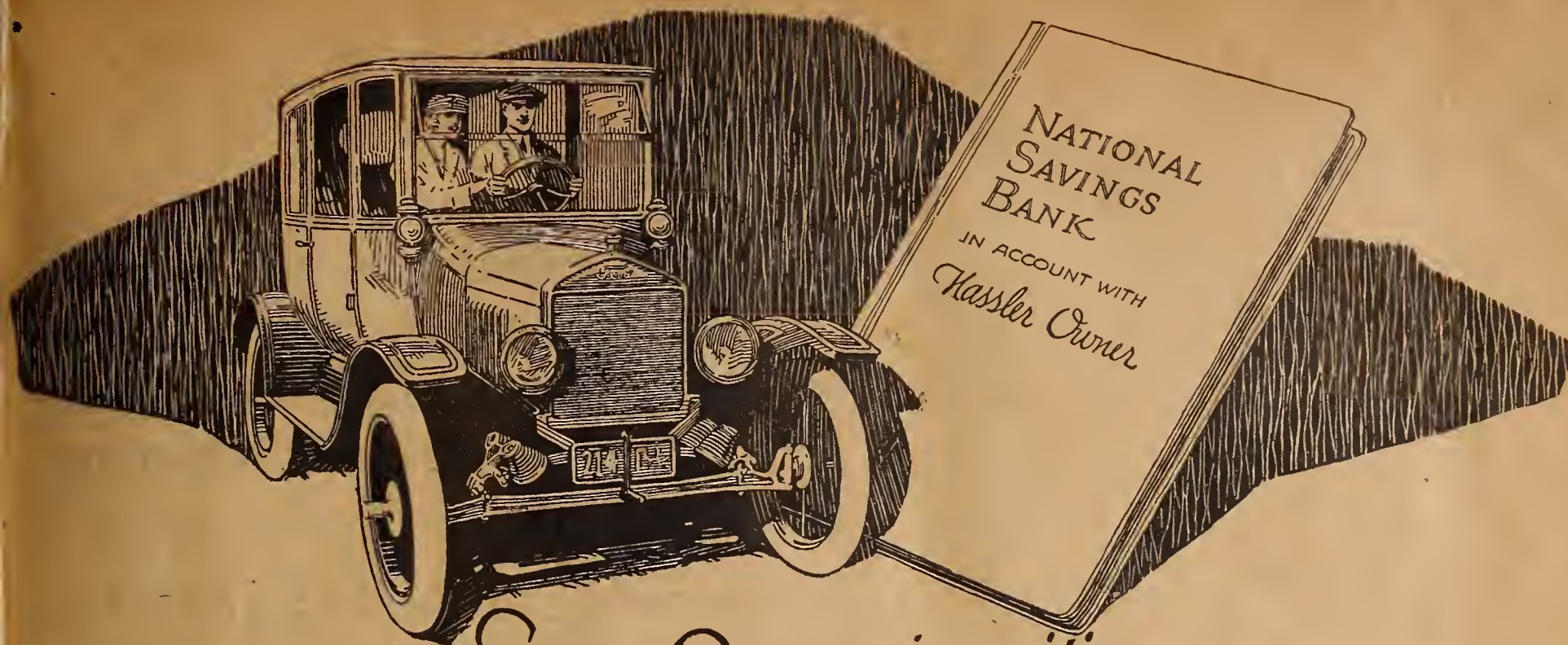
All are easy to lay, very durable, and low in cost.

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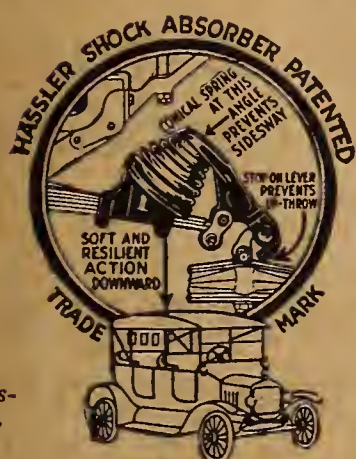
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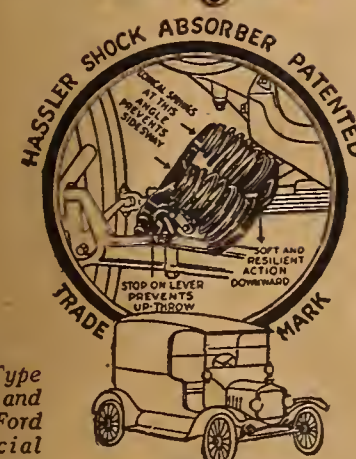
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The conical springs set at the angle shown prevent sideways and allow for the most resilient downward action. The springs compress on either upward or downward movements—do not stretch out of shape—do not allow up-throw. Hasslers last as long as the Ford and make it last.

4

IF the Hupmobile were a living creature, the word *devotion* would exactly describe the qualities which actually endear it to the average family.

It so seldom sulks; it is so ready and willing; it performs so faithfully, that it repays, over and over, the confidence people place in it.

Without question, these are the underlying reasons for the great good will in which the Hupmobile is held everywhere.



Some Things That City People Think They Know About Farming

By Eugene Davenport

Dean and Director Illinois University College of Agriculture

IN a former article—entitled “What is a Farmer?”—the writer pointed out that the purpose inspiring the American farmer has shifted greatly from the simple object of the early settler to own a home of his own, and from the abiding determination of his successor to get as large a portion as possible of the fast-disappearing public domain, to our present-day farmers’ problem, which is no less than to make out of American agriculture a *real business*.

It was pointed out that this cannot be done until an adequate selling end is developed, until individualism gives way to organization, devised and conducted not to obtain rights, but to meet big business upon its own ground.

Before such organization can be accomplished the public must take a different attitude toward food production and toward the farmer who produces it. This is because the farmers and their constituency must work together for the best development of what is after all of mutual concern, and it is also because people cannot work together effectively except upon grounds of *mutual respect and intelligent appreciation of the facts of the situation.*

The non-farming public consists roughly of three classes:

First: Those who know nothing about farming, and who know that they know nothing about it. These may be roughly divided into two groups—those who are deeply interested, and those who do not

their impotence, nevertheless undertake not only to advise but to instruct what they believe to be a most ignorant, wasteful, and inefficient class—the American farmer—fully believing that scientific farming is as easy for a really brainy man as the traditional falling off a log.

Third: Those who were upon the farm a long time ago, but who congratulate themselves upon either their good fortune or their good sense in escaping to the town. These men undertake to speak by the cards about a business they despise but of whose need they are convinced, all based upon nothing more than boyhood recollections.

The folks date mostly from the land-getting period, when, as explained in the former article, men, women, and children labored cruelly for the last chance at land. This class remembers only the hardships as seen from a boy's point of view, and they really despise the chump who remains upon the farm. They read Garland's "Son of the Middle Border" with warm endorsement.

Out of these various classes come not only pity and patronizing, but also criticism and condemnation, as in their partial knowledge they philosophize upon the situation.

American Farming Underesteemed

Food has been so cheap during the period of development that the consumer has scarcely reckoned the cost as coming among his serious expenses, but present conditions have brought him up standing and, so to speak, have developed in him a state of mind inclined to be extremely critical. He is satisfied that our lands are not being properly worked, and quotes figures to prove it. He is distinctly of the opinion that something ought to be done about it, a conviction in which we all agree.

The non-farming public has an extremely erroneous notion of American agriculture. Public speakers and writers like to leave the impression that almost

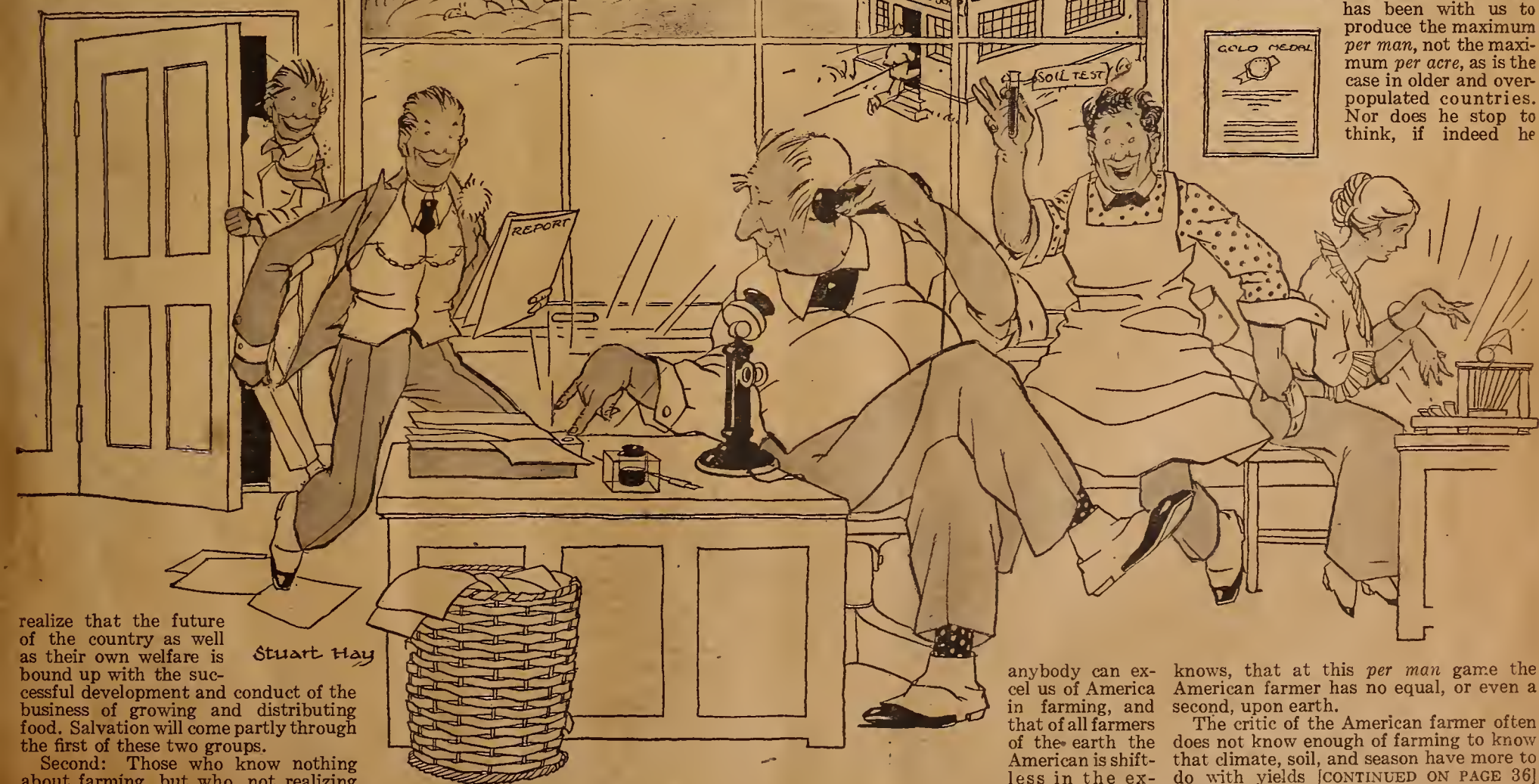
treme, skimming the cream only by methods at once bungling and ruinously wasteful.

Nothing could be further from the literal truth. The great mass of farmers of the earth are "hoe men"—that is, they cultivate mainly with the most primitive of all implements, next to the sharpened stick, and they get much or little out of the land according to the number of men employed per acre. Over against this the American farmer is an operator of machinery drawn by horses, by steam, or by gasoline, and he cultivates anywhere from forty acres to a quarter section *per man*.

The writer knew the "hoe farmer" somewhat intimately in South America, where, of the one hundred and fifty men employed on a single fazenda, not over a half dozen could drive a team with any kind of an implement. They were Brazilian negroes and European peasants of various nationalities, and the only way to get work out of them was to line them up in rows with an overseer at each end of the line giving orders so that the whole line of hoes should come down together. Put enough of these upon an acre and high yields could be secured, but one American farmer with proper machinery could do more work than twenty or thirty of these primitive cultivators.

The Question of Yields

The popular writer quotes yields to show the inferiority of American methods. He forgets that in American farming we have been long on land and short on labor, and that therefore the problem has been with us to produce the maximum *per man*, not the maximum *per acre*, as is the case in older and overpopulated countries. Nor does he stop to think, if indeed he



anybody can excel us of America in farming, and that of all farmers of the earth the American is shiftless in the extreme," he knows, that at this *per man* game the American farmer has no equal, or even a second, upon earth.

The critic of the American farmer often does not know enough of farming to know that climate, soil, and season have more to do with yields [CONTINUED ON PAGE 36]

I've Made Brick Cheese for Fifty Years And Here's What I've Learned

By R. Robinson

BRICK CHEESE can be made in any room that is convenient: the farm kitchen will do for a small amount of milk, if no other room is available; but a damp cellar is absolutely necessary for curing the cheese after the first three or four days, or just after it has been salted.

The equipment needed is simple: A vat or receptacle of some kind for holding and heating the milk. The heating arrangement may be a boiler of hot water on the kitchen stove, or it may be a small steam boiler, or a self-heating vat—that is, a vat having a fireplace and water circulation underneath, which can be got in almost any size needed from the dairy supply houses. A very suitable vat for, say 200 pounds of milk or less, is heated by a kerosene lamp or stove. It is quite satisfactory in every way, and the cost is only around \$20 for the outfit. In any case, the vessel that contains the milk should not be in direct contact with a hot stove or fire, but should always have water between, double-boiler style, so that the milk will not be toasted.

The molds are made out of an inch hardwood board—maple is best, as it does not shrink or warp easily—six inches wide, and cut to make compartments nine or ten inches long, by six inches wide and deep, with no bottom. A piece of the same board having vertical grain is cut to fit loosely into each mold. This is called a follower, and is placed on top of the curd; then a brick is laid on that to press the cheese. A draining table for a small amount of milk may consist of a plank 12 inches wide, and as long as may be convenient, placed in the same room with the vat; it can be made larger according to the quantity of cheese. Have one end of the table six inches higher than the other, and a strip around the sides about four inches deep. Use a few common bricks for weights to press the cheese. You should have a curd knife, or for a small amount of milk take a number 20 galvanized wire screen having meshes a quarter inch square, cut a strip say six inches wide and as long as your vat is deep, and fasten a wire bail to each end long enough to reach above the top of the vat.

WHEN the milk is thick, insert this "knife" and draw back and forth right to the bottom evenly until the mass is cut in quarter-inch cubes or less. Rennet extract can be obtained from any dairy supply house, and is put up in jars from a pint to five gallons. Be sure that whatever size you get is sealed and the seal not broken, and do not accept rennet substitute of any kind, as no substitute with which I am acquainted will make brick cheese properly. There are several brands of pure rennet on the market. You will need a guaranteed thermometer costing about 75 cents and some good common salt.

Coming back to the cellar, an ideal place is the north side of a knoll. Dig the cellar back well into the bank. Cut the walls smooth with a spade, and no other siding is needed; but put on a roof, and wall up the front with double boarding, leaving a four-inch air space between. No floor is necessary. This cellar must be kept thoroughly damp. Do not be afraid to sprinkle until quite wet, even sloppy, while the cheese is curing. Put up shelves enough to hold your stock of cheese, something like large bookcases, the shelves being at least 10 inches wide, or as wide as the cheese is long. Have every part of the plant ready before you begin to make cheese, for milk will not wait and keep sweet.

Now mix night and morning milk in the vat, having taken care that the night milk was cooled and aired immediately after being taken from the cow, so as to be perfectly sweet. Warm the milk to about 90 degrees early in the morning, then for every 100 pounds or 12 gallons of milk mix about half an ounce of standard rennet extract with a pint of water, to make more bulk, which means five ounces of rennet to 1,000 pounds of milk. Pour the rennet into the milk, and stir thoroughly for a minute or two, then cover the vat with a cloth of some kind, and let stand without disturbing until the milk is thick and firm like

custard. This should take from twenty minutes to half an hour, depending on how much rennet was put in, and full measure is best for this kind of cheese.

Cut lengthwise and across with the curd knife, or work the wire screen, mentioned above, back and forth and across until the pieces of curd are about the size of corn

when mixed with a little mill feed. It is not so good for calves. After an hour lift out the brick and follower, remove the cloth, and turn the mold upside down. Replace the cloth, follower, and brick for another hour, and repeat every hour two or three times; then leave under pressure until next morning, adding another brick

it turn yellow and slimy; rub it with a cloth to keep clean, but do not find fault with the slime, as that is a proper consequence of the process, for if it does not get slimy it means that the cellar is too dry, and there is danger that the cheese will crack, also the texture and flavor will be affected.

After about four weeks the cheese will be ready for market, when the bricks are wrapped in tough paper and placed in boxes, on edge, close together, the boxes being just deep enough to hold them in that position. Always keep the box flat as long as it contains the cheese. The boxes are usually made to hold 12 or 24 bricks, or 50 to 100 pounds.

To be successful in making brick cheese, keep in mind that the milk must be both fresh and sweet, and unless there are good facilities for keeping and taking care of the night milk in warm weather it will be better to make the cheese twice a day, just after each milking. The texture of brick cheese should be very silky, and smooth as butter on the tongue, but if the milk is old that texture cannot be obtained. Overrich milk is not desirable, and $3\frac{1}{2}$ to 4 per cent of fat in the milk is likely to give best results.

SOMEONE will probably come along and advise you to use a starter—that is, to add sour milk when mixing in the rennet. After having made cheese for more than fifty years, the writer would say, have the milk fresh and sweet as you can.

If the workroom is kept at the right temperature, 65 to 70 degrees, the cheese will swell a little while taking salt. That means the "eyes," which show as holes when the cheese is cut, are in process of forming, and in a few days the fermentation will die and the bricks will flatten down again. If not, it means that the curd was not cooked enough, or else your milk was "gassy," which is caused by allowing the pails, cans, or other utensils to get dirty from lack of washing and scalding.

There is a good demand for brick cheese of fine quality, in almost any section of our country—a demand that is likely to increase, and keep on increasing, at prices slightly higher than for Cheddar cheese; and the isolated dairy farm, or where two or three dairy herds are in close proximity, so that the milk can be delivered conveniently night and morning to one place, is an ideal location for making it.

Then again, brick cheese is the only variety of cheese having a commercial value that is really and truly American, for it is not like English Cheddar, nor Belgian Limburg, nor Dutch Edam, nor Swiss Emmenthaler, nor Italian Gorgonzola, but a sort of combination of all of them, that meets a great deal of favor with American cheese eaters. The food value of good brick cheese is about the same as the best Cheddar, having nearly double the amount of protein found in beef or pork, and four times as much mineral matter.

New Jersey "Champs" Win Pigs

ASIX-MONTHS-OLD registered Duroc Jersey sow pig was given to each champion of New Jersey boys' and girls' pig clubs this year, instead of the regular cash prize, by bankers of the State who are closely co-operating to further club work.

The champions signed contracts to keep records of their pigs. They agreed to raise two litters from their sows, breeding them always to a purebred boar of the same breed; to keep them until they are three years old, and to donate one choice sow pig from the second litter to the state club leader to be used as a prize.

Prize winners this year are Angelo Beloni, Atlantic County; Florence Dare, Cumberland County; Eugene Phelps, Essex County; Clarence Alles, Hunterdon County; Vincent Darago, Middlesex County; Titus Updyke, Mercer County; Kathryn Cornish, Morris County; Charles Burnet, Ocean County; Irving Pettit, Salem County.

A Failure Who Succeeded

"I WANT a job."

"Joe the barber," who ran a shop near the campus of the Ohio State University, Columbus, turned to find a nervous and very green freshman who had strolled into his place on a hunt for part-time work. When the youth departed he went with the understanding that he was to return the next Saturday ready for work.

In preparation for his tasks, the "new barber" tried out his tonsorial talents on his room-mate—result, much court-plaster used.

Quaking, but true to his trust, the new barber gamely showed up at the appointed time. Before he had a chance to get his breath a customer advanced on him and demanded a shave.

The freshman applied a liberal coat of lather, then started to strop the keen-edged razor. He glanced from the flashing blade to the unscarred face of his unsuspecting victim, his heart quailed and his nerve fled. He applied hot towels, more lather; stopped the razor some more; rearranged the jars of cold cream and bottles of hair tonic on the shelf; stood undecided for a moment—then applied more lather. That was asking too much of a customer—this one, anyhow—for, with a wicked gurgle that caused a fountain of lather to splatter the surrounding territory, customer number one reared up in the chair.

Three seconds later, Joe the barber was in need of an assistant. His newest barber had resigned.

That young fellow was George Livingston, who is now chief of the United States Bureau of Markets.

Needless to say, Livingston didn't let his failure discourage him, even if it did end forever his career in barbering. He turned his attention to the marketing end of the business world. In his spare time, during his years at the university, he worked "on the other side of the counter" in several Columbus

stores. He was a drug clerk, worked in a bookstore, sold gents' furnishings, and finally finished up on a map-selling tour in Kentucky. Then, with the class of '90, he received his diploma in the College of Agriculture.

Livingston originally hails from a farm near Union City, Ohio—Indiana, but instead of returning to his home, following his graduation from Ohio State, he spent a year as instructor in Farm Crops at Iowa State College. He returned to Ohio

State in 1910-11 as an assistant professor of Agronomy. From there he went

to Cornell, where he did graduate work, and then went to Germany in 1914 to study agriculture at the University of Halle. Following his work there he went back to Ohio State in 1914-15 as acting head of the Department of Agronomy. In June, 1915, he went to the Bureau of Markets.

At the age of thirty-three he is now the youngest bureau chief in government service. His work includes the directing of an organization of 14,000 persons, at an annual expense of \$2,800,000.

Activities of the Bureau of Markets include scientific and economic investigations of marketing methods, the operation of a nation-wide network of telegraph wires to gather daily reports on current market prices of food commodities, giving facts to farmers on co-operative buying and selling, devising bookkeeping systems for grain elevators, and other food distributors, licensing and regulating storage warehouses, and administering federal statutes on cotton futures, grain standards, and food-container standards.

Because of Livingston's early defeat, the world will always be short one barber—but the country has gained by the shortage. You never can tell by what a man fails at, what he may succeed with.



George Livingston, inspecting cotton in the Bureau of Markets

kernels. Do this carefully, as the soft curd is easily broken up when handled roughly, causing waste. Now warm the curd while stirring carefully with the hands, or, if you have a large quantity of milk, a common hay rake with the handle cut short is a good utensil for stirring after the first few minutes. Stirring prevents the curd from matting together. Let the heat rise to 112 or 115 degrees, which should take a half hour's time at least. Stir occasionally for an hour or so, keeping the heat about the same. This is called "cooking" the curd.

Now spread a piece of cotton cloth over the draining table, place enough molds on this to hold the curd, and with a dipper of some kind dip curd and whey into the molds quickly, as it will cool rapidly and it is very necessary to keep it warm. Fill the molds about two-thirds full of curd, spreading it evenly. Lay a piece of cotton cloth over the top; place the lid, or follower, in the mold, lay a brick on that to make pressure and cause the whey to drain off.

The whey may be caught in a receptacle for that purpose, and fed to hogs, it being almost equal to skim milk for fattening

the last thing at night, taking care that the follower is quite level, making each cheese an even thickness, which looks much better.

The right quantity of curd to put in each mold may be determined by figuring on how much milk you have. The brick of cheese should weigh about $4\frac{1}{2}$ pounds when taken out of the mold next morning, which would require something less than 40 pounds of milk to each brick of cheese. When the bricks are taken out of the molds the next morning, dip them in warm water and lay on the salting table, which may be part of the draining table, then rub salt all over the cheese. Repeat this performance three mornings, piling the cheese flat, three or four high. It is important that the salting table should not be exposed to a cold draft, as cooling the cheese too much arrests the needed fermentation at this stage. Now carry the cheese to your curing cellar, and place the bricks on shelves, each cheese on edge and close together for a few days, turning them over every morning. After that leave a space of half an inch between them, and turn about three times a week.

As the cheese gets older you will notice

I Find Alfalfa a Very Practical Crop on My Stock and Grain Farm

By W. O. Kunkel



This is Mr. Kunkel standing in a windrow of his own alfalfa

MY PRACTICAL experience supports the scientific tests which have shown alfalfa to be the best pasture and hay crop. For seven years I have grown alfalfa, and would not think of being without a field of it.

I grow it for both hay and pasture, and find it good either way. For pasturing hogs, especially pigs, it is unequalled. One year I kept figures to show what it was worth. After figuring the corn and tankage fed the hogs, I had \$100 an acre left for alfalfa pasture—I also got a crop of hay.

There is no doubt as to alfalfa's value. Anyone who wants to see alfalfa on a real practical livestock and grain farm is welcome to visit my place. I will not only show them alfalfa hay in the mow, but also alfalfa meadow, and pigs thriving off alfalfa pasture, farrowed by sows which had chopped alfalfa hay during the winter.

Moreover, I will show my horses and mules which are fed alfalfa, and fattening steers getting this as part of the roughage.

Alfalfa has a very high feeding value, both as hay and pasture. I know this from my own experience and the bulletins which I have read on the subject. I am an alfalfa enthusiast, and read everything I can find on the subject. And I like to meet men who grow alfalfa, so I can exchange experience with them.

I have alfalfa principally as a pasture for hogs. I produce 300 to 400 pigs each year, and I can make right cheap gains off this pasture. Especially do I find it good while the pigs are growing. It has the stuff in it that builds bone and muscle, and the pigs grow like weeds. I can market pigs weighing 250 pounds in less than eight months when they are pastured on alfalfa.

I don't have any trouble with the pigs rooting the field, even though I don't ring them. I feed them a mineral preparation of charcoal, sulphate of iron, sulphur, Glauber salts, sal soda, rock phosphate, limestone, and slack coal, which I mix myself. It seems this supplies all the mineral matter the pigs need, and they don't root.

When I figured the value of alfalfa pasture, hogs were selling at \$7 and corn at 70 cents. I got three tons of hay in addition to the cash.

I generally have about 20 acres of alfalfa, and pasture all of it with hogs. The alfalfa is cut up into small patches, so I can move the hogs about when I am cutting the hay. And in this manner I prevent them from pasturing any one spot too long. The crowns are injured when the stalk is clipped too short. Sometimes this will kill the crop.

As a rule, I plow up the alfalfa about every five years. I don't have much spare time, and cannot renovate the field to keep down the weeds and blue grass. Blue grass, by the way, is the worst enemy of alfalfa, and unless steps are taken to kill it as soon as it shows in the field, the alfalfa won't last long. Cultivation with a spring-tooth harrow will keep down the weeds and grass.

Eight years ago I talked with Prof. John M. Evvard of the Iowa State College about my hogs. After we got to talking on various feeds and pastures, he told me of the value of alfalfa in making pork. I was interested, and asked him a number of questions. He urged me to try a field of it, and I decided I would, seeing that he found it so good in feeding his stock.

Then I put out a patch of four acres. I figured a small beginning was best, since I didn't know any too much about handling the stuff. I had no trouble in getting a stand, and surely was elated. The pigs, as soon as they became accustomed to it, consumed it readily, and I noticed how much better they grew than when on blue grass.

The first thing I did, when I decided to sow alfalfa, was to get a wagonload of dirt from the roadside where sweet clover had been growing. I spread it broadcast over the four acres, sowing with it a little oats as a nurse crop for the alfalfa. The seed was sown right away, too.

As soon as the dirt hit the ground I harrowed it in, so it would not dry out. The nodules are very delicate, and the sun soon kills the bacteria. Each nodule contains a million bacteria which draw nitrogen to the roots of the plant, and they are absolutely essential for its growth.

I use Western non-irrigated seed, spreading 12 to 15 pounds to the acre. Some people say 20 pounds per acre is necessary, but I have always got good results with the smaller amount.

Later on I found out that the glue method was better. It is much simpler, and saves a lot of labor. Now, when I want to put in a field of alfalfa I go to an old field and dig the dirt about seven inches deep, taking roots and all. This soil is placed in my cellar, and put in the shade to dry. It is essential to keep it from light, for, as I said, this kills bacteria.

Just before I am ready to sow the alfalfa in the spring, I take this dirt, which has dried thoroughly after lying in the cellar all winter, and pulverize it between two rocks. I get it as fine as possible, the standard being the meshes of two window screens, through which I sift it.

AFTER this has been done, I take four ounces of ordinary furniture glue, and make a weak solution of it by dissolving the glue in a gallon of water. Then I take about two thirds of a quart of the glue solution, and pour it over a bushel of seed, mixing it thoroughly so that all seeds will become dampened with the glue.

• On this I pour three quarts of the dust. I stir the seed very thoroughly so that each seed is coated. The seed will look dark gray when it is dusted.

I sow the seed a day or two at the latest, after it has been dusted. It dries easily, and the dust comes off. In sowing the seed, I use an ordinary drill. After the drill I run a harrow, to be sure the seed is thoroughly covered before the sun gets to it. The morning, I find, is the best time to sow the seed, because the sun is not so hot, and the work can be done with more safety.

The seed bed is an important factor in alfalfa-growing. A whole lot depends upon it, and care should be taken that the ground is worked up and as fine as possible. I generally sow my alfalfa from the twenty-fifth of April to the twenty-fifth of May, if the ground is in good condition.

Some say it is best to sow alfalfa in the late summer or fall, but I have always put out the seed in the spring, and since I have always had a good stand I never tried fall sowing.

Ground intended for alfalfa may be plowed in the spring or fall. I think it is best to do it in the fall, because in the spring there is a rush of work, and a most thorough preparation of the seed bed is likely to be overlooked.

I plow, disk, and harrow the ground until it is in fine shape. Then I go over it with a corrugated roller. After sowing and harrowing the seed in about three quarters of an inch, I go over the field again with the roller.

THREE pecks of oats per acre will make a good nurse crop. I have had good success with and without a nurse crop, however. If oats are used, they should be cut in the dough stage. From this time on the oats take a large quantity of moisture out of the ground which is needed by the young, growing alfalfa. [Many farmers have found that beardless barley is superior to oats as a nurse crop. About one bushel to the acre is the usual amount.—THE EDITOR.]

If the oats are allowed to mature, there is danger of losing some of the alfalfa. The oats in the dough stage make good hay, and have a feeding value as high as timothy.

If it rains after the nurse crop has been removed, a crop of hay can usually be cut along in August. The second season the plant is fine and strong, if it hasn't been weakened or killed during the winter. If it is strong, I pasture 16 to 20 pigs to the acre. More than this limit is rather hard on the crop, and may injure the crowns.

I start the pigs on pasture about the last of April or the first of May. I put them in several of the fields, and allow them to remain there until it is time to make a cutting. Then I transfer them to another patch, or on blue grass, until after the hay is gathered.

With 16 to 20 pigs per acre I can generally get from 2½ to 3 tons per acre in three cuttings. I cut the hay as soon as the shoots begin to show at the top of the crown. Each cutting is guided by this sign.

If I have been unable to make the third crop until after September, I let it alone, for this hay, if not eaten by the hogs, will serve as good winter protection. If I didn't pasture the alfalfa, I could get four cuttings which would run from 5 to 6 tons per acre. It isn't good policy to cut too late in the fall. A severe winter may ruin your stand if you do.

I very seldom sell any of my alfalfa hay. What I don't use for the hogs I find use for with cattle and horses. Therefore I don't pay as much attention to cutting and curing the hay as I would if I baled and sold it.

I cut my hay, rake it in windrows, and bring it in the next day. If I wanted gilt-edge hay for selling, I would allow the hay to cure in the cock, covering so as to protect it from the rain. If the cocks are not covered, and it rains, the hay will be spoiled as far as the best market is concerned. But as far as feeding is concerned the value is just as good.

Alfalfa never gets so bad that it is not good. I have had the dog days when blue grass dries up. Clover, too, will wilt under

Who is Kunkel?

W. O. KUNKEL of Carthage, Illinois, is one of the best hog men in the State. He is known for the quality stuff he markets. His place is a fine example of labor-saving, everything being where it is handy and easily found.

He is the owner of 250 acres of land that stands well with any in the corn belt.

Kunkel is about fifty-five. He is enthusiastic over alfalfa, and sees great possibilities in it in connection with hog production. He is one of the leaders in his community, being one of the officials in the farm bureau. It was he who discovered A. M. Wilson, the first agent Hancock County had.

Kunkel, in talking with Wilson, who was then principal of the Carthage High School, and teacher of agriculture, discovered he would make a good agent. He fought for Wilson, despite the fact he didn't have an agricultural college education as required by the Lever bill. This meant no federal financial aid to pay the agent, but Kunkel and the rest of the farmers dug a little deeper, because they said Wilson was the man they should have.

And Wilson proved he was.

Kunkel, speaking of how he got his first information about alfalfa from John Evvard of the Iowa State College, says he believes in "book experts" who have the proper practical background.

He takes great pride in his alfalfa, and has tied samples from three cuttings on a pole to show how high it would grow if left alone. The pole is about ten feet high, and when anyone wants to know about alfalfa, this is the first thing he shows. He figures it a clincher of the argument.

THE EDITOR.

the red-hot sun, but the alfalfa never falters. It stands out sometimes as the only green thing on the farm in red-hot weather. All of the other crops turn brown.

Right then is when it is invaluable to me for my pigs. They must be kept growing, and need the stuff which alfalfa furnishes. Moreover, at the present price of grain it costs plenty to feed hogs on grain and tankage. Alfalfa cuts down the amount of corn and tankage required to make gains. The fact of the matter is that I can make almost 20 pounds of pork to a bushel of corn when the pigs are on alfalfa; whereas, in the dry lot, on corn and tankage, it will require 10 to 11 bushels to make 100 pounds of gain.

My use of alfalfa is not limited to pasturing. I find ground alfalfa is particularly good for brood sows during the cold weather. I have so many sows that it requires considerable attention, after they have been bred, to see that they do not get too fat. Ground alfalfa at this time serves as bulk, and the sows cannot eat enough corn to make them fat. This relieves me of a whole lot of work and worry, and indirectly means bigger litters.

Bred sows eating alfalfa will not eat as much high-priced tankage, either; in fact, when getting ground alfalfa they eat very little tankage. A ration of one fourth corn and three fourths ground alfalfa will not only carry the sows along in fine condition, but is also fool-proof. I can let anyone feed this ration without fear of having the sows overdo it.

Feeding alfalfa, minerals, and tankage have eliminated the pig-eating sow from my place. I never have trouble of this kind, and attribute it to these feeds.

The experience I have had with hogs and alfalfa has been of considerable value to me in more than one way. I have seen how alfalfa pigs grow and fatten when put on full feed, and when I buy feeding pigs I always insist on shotes which come from the alfalfa districts in the West and Southwest.

I know these pigs will fatten more quickly and cheaper than pigs which have been carried along on blue grass and grain.

Alfalfa makes good pasture from April to November. For seven to eight months of the year it is fine and green, and all kinds of stock like it.

Kunkel and some of the hogs he makes off alfalfa pasture



He Was Poor, and the Neighbors Doubted His Wisdom, But He Won Out

The true story of an Ohio farmer

By C. T. Conklin

I NEVER inherited nor married a dollar in my life; Hereford cattle have made me what little I have," modestly remarked James V. Hill, as he showed me over his 800-acre farm in western Ohio.

I am going to tell the story behind that remark of Hill's because it is the story of what a poor man can do when he sets his mind to it. It is a story that proves that success is as much a matter of spending thought as of spending money. It also proves that poverty need not keep a man from getting started right in money-making purebred stock and crops.

Only fifteen years ago, young Jim Hill, newly married and heavily in debt, started farming in Hardin County, Ohio, on some of the same land we were then tramping over. To-day, Jim Hill is breeding prize-winning Herefords, and shipping carloads of breeding cattle into dozens of States, from the Atlantic to the Rockies.

Hill's original 100 acres have been increased to 800; his first two registered cows have been followed by a herd of 300. With very little working capital, heavy mortgages, and no previous experience with purebred cattle—in fact, with no brighter prospects than any so-called average farmer—Hill tackled the purebred stock business, and has risen to a position where he is now nationally known. Even the neighbors say that "Jim" has made good.

During the first three years that Hill farmed for himself, only the usual cash crops of oats, hogs, and steers were sold. Prices were low, but by careful management Jim Hill saved enough to buy two registered cows. Those first two big white-faced cows were almost curiosities in a community where purebreds were practically strangers. All the neighbors knew that they cost \$200 each, and that they were "pedigreed," but not a few doubted the wisdom of the purchase.

With Hill, however, it was a business proposition. He felt that with purebreds he could enlarge his income, increase his business on the same acreage, and get away from some of the drudgery of everyday grain-farming.

Hill also believed that these very neighbors who were then so skeptical would be wanting young Hereford bulls with which to improve their herds. But above all, he told me, he believed in the future of the purebred beef business because he knew the history of the development of the Great West, where thousands of well-bred bulls had gone into service on the range.

HILL felt confident that the coming of good-quality cattle from the plains to the feed lots of the corn belt would surely prove the worth of the purebred bull on the average farm. So, according to him, he went into the registered cattle business because he believed it was fundamentally and economically sound. That's a good point to remember when you're going into something.

It was slow work, but by normal calf drops and careful purchases with the farm earnings the Hill herd steadily increased. According to this breeder, he got the most for his money, when getting his start, by buying old cows safe in calf.

Hill does not hesitate telling the beginner in the cattle business, with limited capital, gradually to get his start by attending auction sales, and purchasing cows that are past their prime, say from seven to ten years of age, and safe in calf to a good sire. It is still better business for the beginner to purchase a bred cow with a heifer calf at her side. A number of Hill's good matrons were secured in this manner.

Just to emphasize his point regarding the breeding value of an old cow, Hill pointed to a big droop-horned matron named Jessamine 3d, that was then fourteen years of age. She had dropped eleven calves, ten of which she had successfully raised. One of her daughters is at present a member of the breeding herd, while the other nine offspring have been cashed in for \$14,500. After affectionately stroking the sappy red

coat of old Jessamine, Hill pointed to another cow that had produced nine healthy calves that had realized some \$10,000.

"Of course," Hill added, "all of them don't do this well, but still there are more bargains in the old purebred cows that go through the auction rings than with the youngsters. At least, that's the way I got my start."

By the time the herd had grown so that a few of the surplus animals could be sold, Hill had two principles firmly fixed in his mind: First, he would never sell a purebred calf for less than \$100; second, he would sell all the Herefords he possibly could to his neighbors.

It is sufficient to say that the first rule has never been broken. The observance of the second precept—the selling of Herefords to the neighbors—is in Hill's estimation one of the reasons for his success. Some men of less vision might have feared that a large number of breeders in the neighborhood would soon result in an over-production of cattle that would bear prices down to an unprofitable level.

But that was not Hill's point of view. He believed that good cattle in his neighbor's fields would result in better neighbors, with bigger incomes, better homes, a keener interest, and an ability to buy the best cat-

tle that Hill could produce. How well Hill has succeeded may be judged from the fact that there are now forty Hereford breeders in the community, and practically every one of these has purchased cattle from the man that blazed the trail.

Of course, it took time, patience, and perseverance for Hill to put across his

Herefordizing campaign, and all the principles of advertising and salesmanship had to be employed before much progress was made. But Hill's success depended on a market for his surplus, and in this case the demand had to be created.

In Jim Hill's estimation, the establishing of a trade in purebreds is one of the biggest problems that ever confronted him. It is his opinion that a great many ambitious young stockmen never succeed because they do not develop a trade that is willing to pay fair prices for good stock. However, he qualified these statements

by acknowledging that the longer a breeder is in the business the simpler becomes the problem of marketing the surplus.

In some cases Hill induced the neighbors to take bred females with such a liberal extension of terms that the offspring, when dropped, paid a goodly part of the price of the dam. Hill found, however, that those

who purchased heifers were soon in the market for a sire, or for better heifers. Consequently, his liberal terms were seldom necessary more than once.

A number of females were sold with the understanding that Hill would purchase the offspring back at weaning time. Of course, a great many young bulls were sold in the community for use in grade herds, and the white-faced calves along the roadsides all helped to advertise the few purebred breeders that were fostering the seed stock.

The addition of a show herd of high-class specimens also helped to expand Hill's trade. At first the country fairs in the surrounding district were visited. Hill found the local show circuit an easy way of disposing of his surplus bulls. Within a few seasons the state fair was included, and now an extensive circuit of six to eight weeks is made.

An effort is made to visit the fairs in the States in which there is prospective business or a trade already established. Since Hill's trade is largely in the East and South, he makes those fairs. He believes it is good policy to show cattle of his own breeding. In that way the herd bulls are given a reputation, and the breeder gets much more credit than when a few choice specimens are purchased and shown.

"I actually believe the show ring is the least expensive advertising a breeder can get," stated Hill, "although it should be followed up by space in the farm papers that circulate among the people one wishes to reach."

HILL makes it a point to have his cattle fat and looking their best when they are offered for sale. Early in his career he found that quick maturity and easy fleshing qualities were of paramount importance, and that certain lines of breeding were at a premium because of their pronounced beef-making tendencies. Consequently, this breeder tries to bring out the best that is in his stock by giving the young prospects constant access to the feed pails.

The animals intended for his annual auction are put on feed several months before the sale date. That this has proved profitable is evident in the fact that ten heifers recently averaged \$1,540 each, and one that was a real show prospect brought \$3,300.

Unfitted, this heifer probably would have sold for less than half the amount she realized. Hill feels confident that the added feed bill is more than met by the higher appreciation of the buyers.

On the other hand, the old cows in Hill's breeding herd may look a little rough as they dot the blue grass and the stalk fields. But Jim Hill knows that every one of these cows is a proved breeder. They may be rather thin in their everyday clothes, but they inherit characteristics of early maturity, and thick fleshing that is transmitted to their calves.

"Each of these cows has a history that is written into her pedigree. That is why I spend a great deal of time studying pedigrees, watching shows and sales. I believe the time has been well spent, for it has made me familiar with the ancestry of my breeding herd," said Hill.

From the very first of his Hereford days, Hill has been on the lookout for outstanding breeding cows. Not infrequently they have been "diamonds in the rough," that have been offered at dispersal sales. Sometimes they have been very thin, but if they had the right kind of a pedigree, and looked as though they might make good, they were given a chance. If they produced outstanding calves they have been appointed matrons for life on the Hill farm, with an ample diet of blue grass, alfalfa hay, and corn silage.

On the other hand, Hill does not believe in going out and paying extremely high prices for overfat show females for breeding purposes. He claims that not infrequently they have a showing or advertising value that is not in line with their breeding value. Hill also believes that, whereas the best is none too good, a beginner may be making a serious mistake (CONTINUED ON PAGE 37)

The Pasture

I'M GOING out to clean the pasture spring;

I'll only stop to rake the leaves away
(And wait to watch the water clear,
I may):

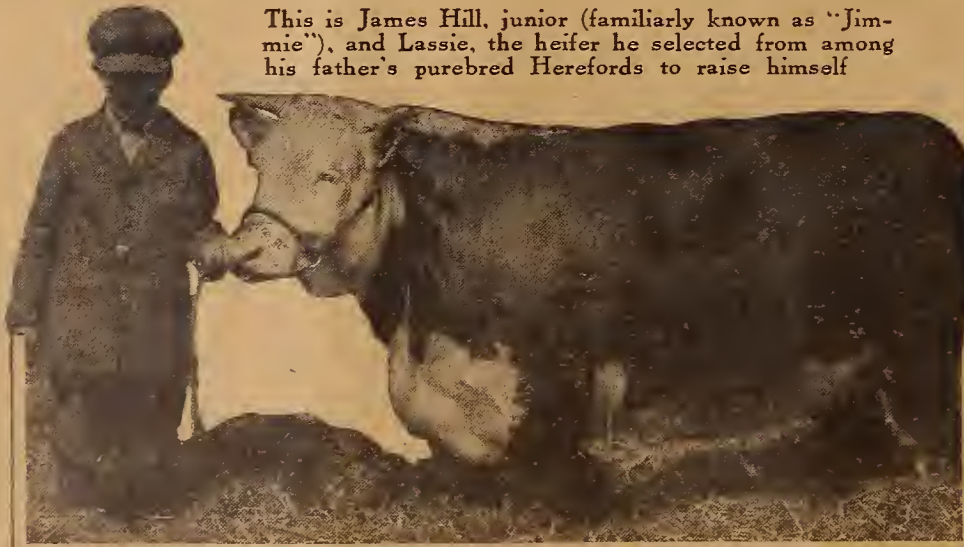
I sha'n't be gone long.—You come too.

I'm going out to fetch the little calf
That's standing by the mother. It's
so young,
It totters when she licks it with her
tongue.

I sha'n't be gone long.—You come too.

From "North of Boston"
by Robert Frost
(Henry Holt & Company)

This is James Hill, junior (familiarly known as "Jimmie"), and Lassie, the heifer he selected from among his father's purebred Herefords to raise himself



Jimmie's Father Knows How to Keep Him Happy on the Farm

THE story of how Jimmie's father made himself over from a poor farmer into a prosperous purebred cattleman, with practically no capital to go on, is told on this page by Mr. Conklin, but this little story of how Jimmie's father is making a happy and capable farmer out of him, instead of letting him grow up and drift away to the city, is just as interesting and just as important.

Every year Jimmie's father lets him select a heifer—he has shown him how to do it—and then Jimmie feeds, fits, and sells the animal as a yearling. The bulk of the money goes into the bank toward a fund that will take Jimmie through the state agricultural college. He is now ten years old.

Lassie, the heifer you see him with in the picture, brought \$1,020, which seems to prove that Jimmie is already a pretty good picker.

THE EDITOR.

What the Government Has Found Out About Your Wife

By Aaron Hardy Ulm

THE facts in this article will show you, as a farmer, how near your wife comes to living as well as the average American farm woman. It will show you whether she rises earlier, works longer and harder, has less leisure, or in any way gets a worse deal than other farm wives—or a better one.

It may show you many ways in which you can give your wife a little help, and it may show her how she can do much to help herself. It brings up the question of the woman's spending money, vacations, babies and their care, running water and other household conveniences.

The facts were supplied to the Government by the farm women themselves, who answered the questions asked by Miss Florence E. Ward of the U. S. Department of Agriculture, who conducted the nationwide investigation which has just been made public.

There are seven million wives on the farms of this country. To get at the average conditions among these seven million, 10,000 farm women were questioned in 33 States. Each woman was asked 200 questions. The results were compiled by sections—Eastern, Central, and Western. And here they are:

Fifty out of every hundred farm women get up at five o'clock in the morning. The other fifty arise by or before sun-up.

The length of the farm woman's work day is an average of 11 hours and 18 minutes the year round. In summer it reaches a maximum of a little more than 13 hours, in winter it falls to a little more than 10 hours.

As for a rest period during the day, they have only a little more than an hour and a half in summer, when farm work is heaviest, and not quite two and a half hours in winter.

Asked about annual vacations, 87 of the 100 shake their heads, only 13 out of every 100 enjoy annual vacations, which average only a little more than 11 days.

California and New Jersey women make reports away above the average on that item. Seventy-five of every 100 in California report vacations averaging 16 days a year, and 67 of every 100 of the New Jersey farm women report annual vacations close to the average length.

AS TO the size of the homes they care for, those of the Eastern group average a little more than nine and a half rooms, the Central a little more than seven and a half, and the West go just beyond five rooms.

Fifty-four of every 100 tend the heating stoves, even to taking in the wood as well as carrying out the ashes. Seventy-nine out of every 100 farm homes are lighted by kerosene lamps.

Sixty-one out of each hundred have to carry water from springs or pumps. The water supply averages 39 feet distance from the kitchen, being only 23 in the East, 41 in the Central States, and 65 in the West—you can thus count the laborious steps that water-carrying requires of the average rural housewife.

Only 32 of every 100 report running water systems, though 48 have water in the kitchens. In 60 of the homes there are sinks and drains, but bathrooms are reported by only 20 of each 100, and they vary little with the sections.

Carpet sweepers are in 47 of each 100 homes and sewing machines in 95. Screens and windows—thanks to nation-wide agitation against the housefly—are reported by 96 out of every 100.

Outdoor toilets hold their own in the face of modern sanitary knowledge, 90 per cent reporting them. More than half, or 57 out of each 100, have washing machines, but only about 20 out of each 100 have electric or gas irons.

Approximately 90 out of the typical 100 do their own work without outside help, but 79 of the 100 say they have help from members of the family.

All but six bake the family bread, as well as do the other cooking, and about the same proportion do the family sewing. Mending takes an average of a half an hour a day.

Washing and ironing are done on the

premises of all but four per cent of the homes.

"How many of you have children?" asks Uncle Sam. Most of the hands go up; but when they tell how many children they have, the average numbers are surprisingly small, showing less than one and one-fifth children under 10 years of age, per family. There is less than one child between 10 and 16 years old, per family. The child rate increases as we go West, but not much.

About 25 report at least one member of the family incapacitated by illness or old age, and about an equal number have to cook for hired help used on the farm, though the figures on these two items are not as complete as on others.

"How many of you help with field work?" asks Uncle Sam. And no fewer than 24 out of the average 100

ing operations. Thirty per cent keep home accounts. This item indicates great progress.

The most telling contrast developed by the survey is that between the use of power in the home and in the barn or on the farm.

"As power on the farm is the greatest of time and labor savers," says Miss Ward, "so power in the home is the greatest of boons to the housewife. Of the total answering the question, 48 per cent reported power for operating farm machinery. When we consider that it is a simple matter to connect the engine used at the barn with household equipment, it seems singular that but 22 per cent of the farm homes reported that advantage.

"The Eastern section reports 50 per cent of power on the premises and 12 per cent in the

First, there is Myron T. Herrick, whose book "Rural Credits" blazed the way for the passage of the act. He is perhaps our foremost farm finance authority, and ex-president of the American Bankers' Association.

"The farmers in the aggregate have accumulated sixty billions of wealth," says Mr. Herrick, "or one fourth of all the nation's wealth. This and their annual income are more than enough to supply their own banking and financial needs, if they should mobilize the credit value of these stupendous resources. But this mobilization can be accomplished only by forming banks of their own. Most of the funds which banks are using for other industries came from agriculture. Crops, animals, and animal products represent 56 per cent of the average bank's resources.

"With their own banks, farmers would have first use of the wealth they create, and avoid much of the necessity of mortgaging farms and all the losses coming from forced sales of their crops. Moreover, they would add strength to their already existing associations, and save the interest they now pay in borrowing from outside sources.

"They would also help all other industries, because the farmers' needs would be for short terms, in most cases, extending no longer than from harvest to harvest, when their returns increased by the resulting improvement they would mingle with the general banking power and swell its volume."

TO START the farm loan system, the Government advanced \$750,000 capital to each of the twelve land banks, and this will soon be repaid, since farmer borrowers have subscribed to the stock of these banks to permit of this. When this is done, the farmer borrowers desire that the entire system be turned over to them, without any supervision, that they themselves may operate the banks as their needs may demand.

Senator Charles Curtis of Kansas is father of the idea of giving the farmers their own land bank system. The machinery already available, made possible by the farmers' universal acceptance of the system, and Mr. Curtis advises that it is merely a question of so amending the Farm Loan Act as to provide that the farmer borrowers shall be the managers of their own system.

To accomplish this end a few changes would need to be written into the present Farm Loan Act. Instead of placing the management in the hands of a Farm Loan Board of four members, of whom the Secretary of the Treasury is the head, each of the dozen district land banks would be a unit by itself, the officers of the district banks being elected by the farmer borrowers, and the dozen bank directors forming their own national managers, a board of directors elected from the ranks.

Appraisers, who are the real sore spot of the system, are now appointed by the Washington board, usually upon the recommendation of private bankers and so-called agricultural leaders. Under the new plan the farmer himself would delegate one man to consider land values, rather than one appraiser and three loan committeemen. This would mean a saving of from one to four months in the time now required to close loans, and would not reduce the value of the mortgage one iota. And farmers would then deal with farmer appraisers, not with private-banker appraisers.

At the election held annually, directors of the district land banks would be elected by the national farm loan associations of the district, land bank officials being only those who are also borrowers and stockholders of the system.

Bonds would be issued by each district land bank upon the farm mortgages of the district, or the national body could arrange for the sale of farm loan bonds through the various bonding houses. Inasmuch as each borrower is held responsible for any losses to the extent of ten per cent of the amount of their loans, the buyer of the bonds, as now, would have gilt-edge security, and need have no fear about purchasing these bonds. The fact [CONTINUED ON PAGE 28]



Miss Florence E. Ward, in charge of Department of Agriculture extension work among the women of the North and West. She directed the Department's survey of farm women. This picture shows her at her desk in Washington

held up their hands. For the country as a whole, those who work in the field are thus engaged for almost seven weeks out of each year, though the period rises to eight and a half weeks in the Western section, and falls to a little less than five weeks in the Central section. [No farm woman should have to work in the fields.—Editor.]

The same percentage that admits work in the fields helps to bed and feed cattle. The survey shows that there are slightly more than eight cows on the average American farm, which averages 64 acres in the Eastern section, 175 acres in the Central, and 275 acres in the Western.

It is pleasing to learn that the greater proportion own their homes, 83 of every 100 so reporting in the Eastern, 75 in the Central, and 85 in the Western sections.

Concerning poultry, 81 of every 100 farm women replied that they personally look after flocks averaging 90 members. However, only 22 have the poultry, and only 16 have the egg funds for pin money. [This is wrong. The woman ought to have that money.—Editor.]

About one third of farm women do the milking, 88 of every 100 wash the milk pails, and 65 look after milk separators when used, and 60 do the churning. Yet only 11 have control of funds resulting from sales of butter. [This is wrong, too.—Editor.]

Distances have been greatly reduced in more than a majority of cases by the automobile and telephone. An average of 62 of every 100 farm homes report motor cars, and 72 have telephones. In Kansas, the car reaches the highest point of prevalence, being available to 92 of every 100 farm wives. In Illinois, 96 of every 100 farm homes have telephones.

One of the pleasing surprises produced by the returns was the large number of women who keep accounts. Nearly one third do the farm accounting, and fully one third keep records on poultry or butter sell-

home. One State reports seven per cent, and another—the lowest—two per cent of power machinery in the home. Only one State, Utah, shows a larger per cent of power in the home (43 per cent) than on the farm (21 per cent). Illinois shows the highest per cent (48) of power in the home, with 79 per cent on the farm, and Iowa comes next with 56 per cent in the home and 65 per cent on the farm.

"The loss to family and community by such waste of woman power as the survey discloses," continues Miss Ward, "could be prevented by a reasonable amount of planning and well-directed investment in modern equipment by the farmers."

The returns from the survey are to be used by the Department of Agriculture and by the agricultural colleges in the various States as a basis for a constructive program looking to the betterment of conditions affecting the farm woman.

Shall Farmers Operate the Farm Loan System?

AN AMENDMENT to the Farm Loan Act is being drawn which will turn the system over to the farmers, if passed. It is operated by the Treasury Department at present.

There is not a grain of socialism about this new plan. It is just plain democracy. The American farmers have advanced the unquestioned security and subscribed to the capital stock of the system, granting and closing about \$400,000,000 of farm loans to date. The railroads, telegraph, and telephone lines have been turned over to their owners, and the farmers are asking why their own farm loan system should not also be given to them without any strings tied to it.

And these farmers have some pretty good authorities that agree with them.

The Kind of Sheep to Grow, and the Time They'll Bring the Most

By Tom Delohery

IF YOU were to ask me the most important thing for a farmer to do to get the most out of the sheep business, I would say:

"Make them good."

I observed this fact in the nine years I spent on the Chicago market. Making fat sheep and lambs does pay well. In this respect the sheep trade differs from the cattle market. Sometimes it does not pay to make cattle prime; but sheep, always.

Failing to make them good is where some producers of sheep east of the range have made their big error in the last three or four years. Yet I know the general farmer can succeed with sheep, because I have found men who studied the market, and who have made as much money out of their sheep as they have in feeding cattle and hogs.

The biggest demand, of course, is for lambs. This is due to the change in the demand. At one time the American consumer demanded heavy cuts of mutton, such as come from sheep; but, like the change in other livestock, lighter and neater cuts of mutton have been wanted, and these come from lamb carcasses.

In cattle, the range country cannot compete with the country east of it; but they now have a little the better of it when it comes to lambs. This because the Western lambs are invariably of good quality, and of the right weight, and cut up into trim carcasses which sell well.

Like other livestock, there are times of the year when lambs and sheep are high and low. To show this fluctuation in the market, I have prepared a series of charts for Western sheep, Western lambs, native

sheep, native lambs and yearlings. The prices named do not mean anything, they merely show the high and low time of the year. The prices are an average for ten years—1906 to 1915. What I did was to average the prices for each month for the ten years, so as to get a fairly accurate trend of the market over twelve months.

I might remark at this time that too much stress must not be laid upon these charts, because they are merely the past history of the market; and yet, while they are no absolute guarantee for the future trade, it will be noted that the averages for each month over ten years show trend of the market. By that I mean that the average of the ten months of January, for instance, show that the prices during this month are not so low as in June.

The charts show that both sheep and lambs reach the high point in the months of April and May. The sheep prices drop off then until toward the close of the year, while lamb prices rebound a little after dropping off from May to June. A spurge is taken in July, but values drop off again until October, when they go up.

Native lambs and Western lambs practically follow the same course. Both drop off from January to February, and are up again in March, reaching the high point of the year. The Western lambs hold the top for two months, while the natives stay up until May, right around the top. Then both kinds drop away down in June, going up for a brief spell in August, and then are off until the low point of the year is reached in October. After that they sell better, and prices go up.

Western sheep, native sheep and yearlings, act in about the same manner. Starting in January, they continue to go up until the high time for all is reached in April. Then prices drop steadily, the low point for yearlings and Western sheep being reached in October. Both then go up for two months. The native sheep hit the low spot in August, going up a little in September and October, and dropping down until the year runs out.

AS I did with cattle and hogs, I got the figures with which I made these charts from the stockyard company at Chicago. Similar figures, for the various markets, can be obtained from the stockyards companies, Bureau of Markets, or the market newspapers. They all are reliable.

Receipts of sheep at the Chicago market in the last few years indicate that the country east of the range is getting back into the sheep business after a lapse of a number of years. The movement started about five years ago, when the sheep population of this country dropped to about 3,500,000 head.

At that time a campaign was put on to increase production in the East, because the range was diminishing, due to millions of acres of grass land being cut up into homesteads and opened for cultivation. There are still vast tracts of range which cannot be used for farming

purposes, and will only be good for grazing purposes, but enough sheep cannot be raised on this land to supply the country.

This campaign to get corn-belt farmers to take up sheep production, judging from increased receipts of sheep at the various markets, was successful; but, judging from what has happened, it was carried a little bit too far. I say this because the sheep was held up as an animal which would eat all sorts of weeds, and clean up the farm in general. Many farmers, with prices good,

saw this was an easy way to get rid of their weeds, so they bought feeding sheep at pretty fair prices.

After keeping them on their farms for two or three months, they brought them back to market, carrying about the same weight as when taken out. These lambs were not ready for the killers, and had to be resold to feeders, at a big discount; sometimes it

amounted to as much as five or six cents a pound. I remember one Iowa farmer who lost six cents a pound on lambs because they were no fatter than when he took them out.

THE lambs lacked finish—the big thing which makes the business profitable to the farmer.

Sheep or lambs must have grain, or very good pasture, if they are to get fat. I have found that the farmers who make the most money, and who continue to find sheep profitable, give them grain.

Frank Erwin of Stephenson, Illinois, is one man who has made money in producing lambs, because he puts a nice finish on them. He has a small flock of ewes, and in order to make a carload buys some feeding lambs.

"It has been my experience that if lambs are properly handled," he said, "and made fat, they will bring good prices—enough to give the producer a good profit. Good pasture and a little grain will do the work in nice shape. The better the pasture the less grain will be required."

Packers tell me that lambs weighing from 60 to 80 pounds, carrying the right finish, will always find good demand and top prices. Over this weight, even though they may be well finished, they do not sell so well, because the lighter animals, as I said before, yield attractive cuts, with just the right fat and marbling, and sell readily. There is nothing forced about the sale, as with heavy stock when lamb is plentiful.

By studying the market, it is easy to see that Western lambs outsell the native product. Of course, both kinds may top the market each day, but more range lambs sell at the top figure. The reason is that they are the right weight. The native lamb is generally of a larger frame than the Western product, and when finished comes nearer weighing 100 pounds than 80 pounds. However, if native lambs scale 85 to 90 pounds, and have the right finish, they sell readily at top prices. And packers tell me they would rather have the natives, because they are fed

largely on grain, whereas the Western lambs are made almost entirely on grass.

While speaking of native lambs, I might remark that farmers who raise lambs will find it to their advantage to dock and castrate the lambs at an early age. Bucky lambs, if sold young, generally go in with the bunch; but if held over until the fall there is a heavy discount. I was talking with Frank Marsh, veteran salesman at the Chicago yards, last week, and he said the discount ranged from two to five cents a pound.

Sheep usually find best sale when weighing between 100 and 125 pounds. The supply of aged sheep is decreasing, and more especially in the last year. Because of that, they are selling right up close to lambs—in fact, as close as they ever did. Ordinarily, if the supply was good, there would not be much of a demand, because, as I said before, people want lighter cuts of all kinds of meat. Mutton is sold when people want cheaper meat, and when lamb cannot be had.

Farmers who feed lambs regularly tell me they use the same methods in deciding what kind of feeders to buy as they do when they want thin cattle.

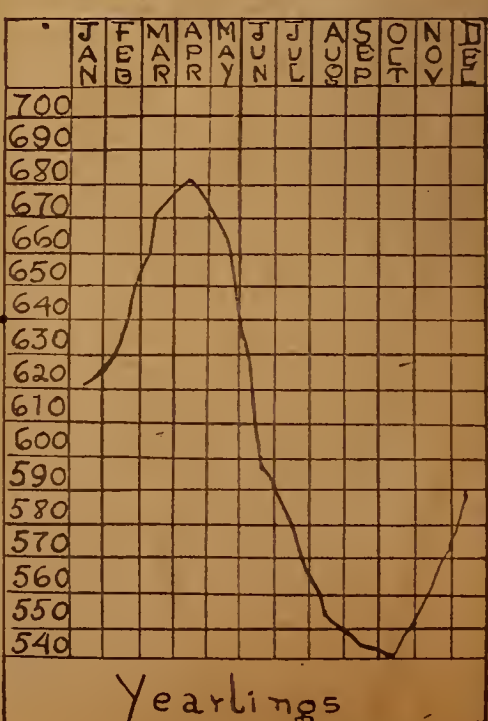
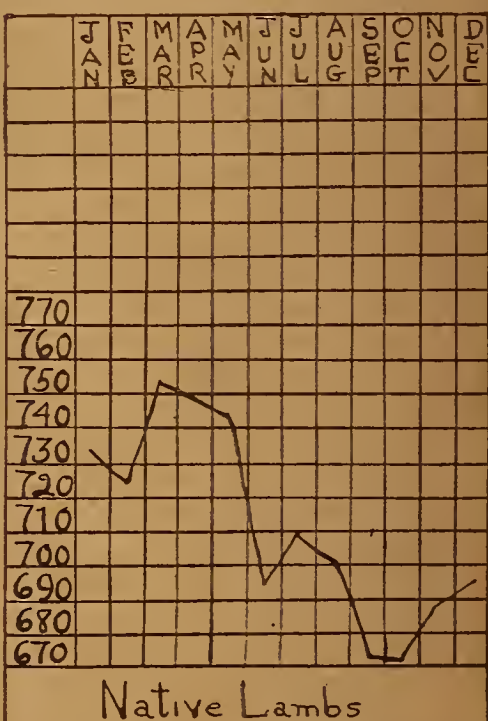
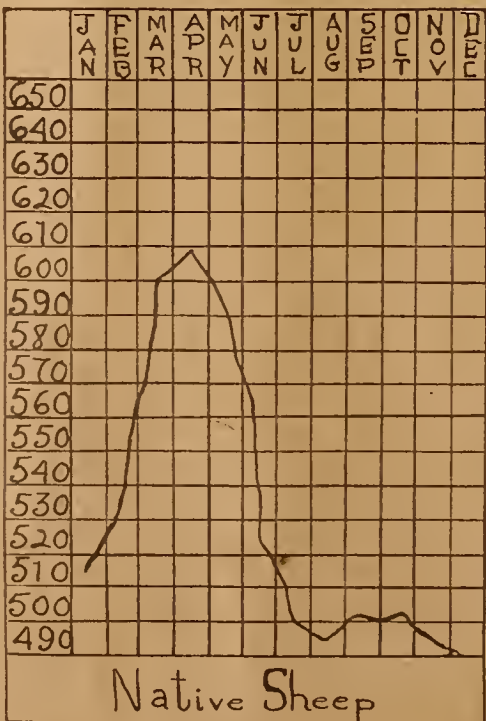
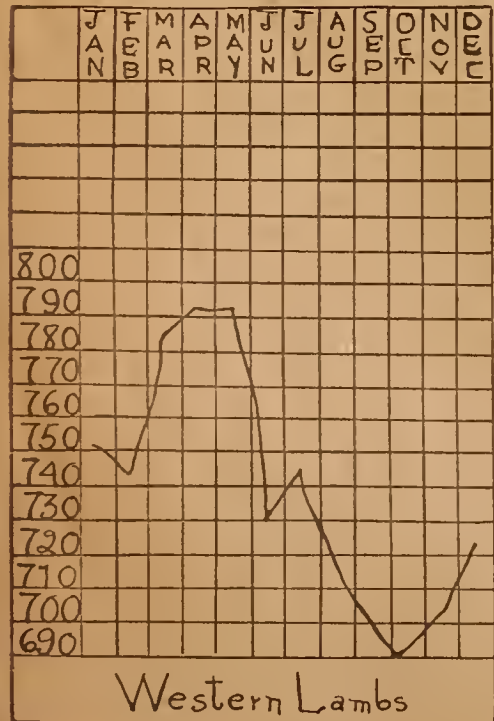
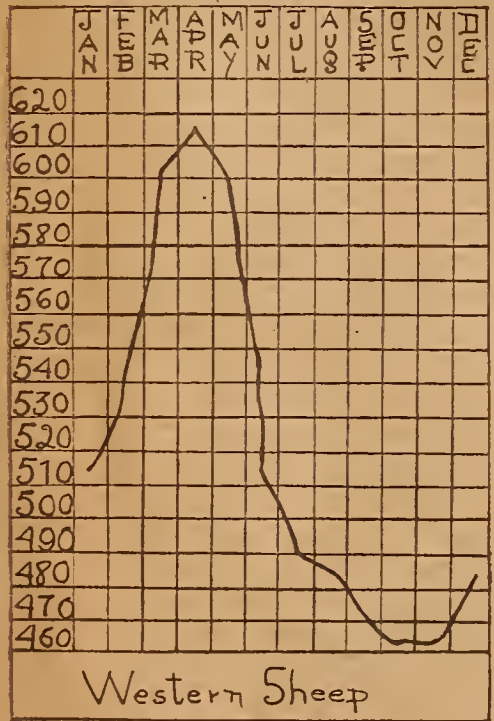
"I generally buy lambs weighing around 50 pounds," said A. R. Flerz of Seneca, Ohio, who feeds a few loads a year. "This is in keeping with the amount of feed and pasture I have. I generally buy my lambs in September, when the price is at the bottom."

"I generally feed the lambs a little grain while they are on grass. When it gets cold and wet, I take them in the feed lot, and let them have [CONTINUED ON PAGE 29]

Think This Over!

HIGH prices are caused by short supplies. Low prices are caused by big supplies. This article tells you what months sheep and lambs sell high, and what months low. Now, if you can work out some method of breeding or feeding that will put your sheep on the market when the demand is great and the supply is short, you will reap the benefit.

THE EDITOR.





He was a young and guileless flicker

Baby Birds I Have Known That Didn't Want Their Pictures Taken

By James Speed

EVER since I began as a small boy to notice the birds, I have considered them the very best society in the out of doors. It always seemed to me that they must represent the upper crust in the various social sets in the woods and fields because they wore exquisite gowns, they dressed their children simply, they expressed themselves quite wonderfully, they built beautiful and artistic homes, they had a married life which was almost ideally human, and they held an annual spring song festival which was without a counterpart in the world.

It also seemed to me that everybody ought to be able to enjoy the birds, and yet I knew many people who did not recognize even the commonest ones. I recall wondering if these people were not like complete strangers in a large city who were unutterably lonesome and forlorn because they did not have even a nodding acquaintance with the people they met on the streets, much less an opportunity to visit them in their own homes.

I invariably felt this most keenly in the early spring when many of my bird friends came from the Southland decked out in all their gorgeous wedding finery, and mad with ardor which shimmering sunshine, budding trees, and blossoming wild flowers puts into the hearts of all life in nature.

My acquaintance with the birds early in spring, when their full-throated songs made the fragrant air tremble, invariably ripened into a closer friendship as soon as home-making was in order in open fields, in dense thickets, and in the heavy timber. During this lovesick period I have been able to see the human nature even in a meddlesome, noisy, old bluejay who was busy rehearsing his love antics and his low pleading proposal in an apple orchard which was simply smothered in pink and white blooms. I have always felt that this mating and singing of birds each spring gets into the bones of young people because they too grow dreamy-eyed, and soon there is the ever-recurring flood of June weddings. The home life of birds, which is absolutely different from the home life of most of the other lower animals, has given me many days of exquisite pleasure and many valuable lessons in patience, fortitude, endurance, and good cheer; in fact, the birds had done a great deal for me long before I began to take photographs of their babies; but from then on my enthusiasm increased in leaps and bounds, because I at once got much closer to their wonderful home life.

THE photographs which illustrate this article I have carefully selected from my large collection with an eye to showing what can be done in photographing young birds at home, because it is a specialty like photographing real human babies, only there is the added handicap of having to work in the open air and under changing conditions of light and shade which cannot be controlled.

One June afternoon, while passing through a strip of heavy timber, I heard a pair of tufted titmice talking rather excitedly, but not in a quarrelsome tone. Upon investigating matters I found three young birds with their small heads poked out of a knothole in a sugar maple which had cradled them.

These babies, now fully fledged, appeared rather timid about trying their wings, while both parents kept insisting that they should leave the nest at once. To make what they said doubly emphatic, the old birds carried in their bills a most tempting array of fat, juicy, brown and green "measuring worms." At length the persuasive tones of the parent birds, plus the luscious measuring worms they dangled temptingly before the hungry babies, proved too much for the youngsters, and one of them, more daring than the others, fluttered out on short, unsteady wings.

Fortunately for me, he alighted on a twig where the light was almost perfect, so I was

able to secure at once a first-class picture, especially as he became intensely interested in me and my camera, and forgot everything else about him. I really need not have told the reader that this titmouse was a real



This owllet just kept staring and staring

baby, because a glance at his picture shows some of his baby hair still sticking up on the top of his saucy head.

At times one secures a remarkable photograph in a most unexpected manner and in the most-unlooked-for location. For years I had observed night-hawks circling over my home city of Louisville, Kentucky, and I had read that some of these birds laid their eggs on the gravel-and-tar tops of tall office buildings.

Of course, I had hoped to find such a nest or a young bird in such a location, as it would show how thoroughly human birds are in their ability to adapt themselves to the changes which man makes in their environment. I might simply throw in the statement at this point that nighthawks that get their prey over our cities and towns at dusk and at night have an easier life than their country cousins, as the electric lights attract countless millions of insects.

In other words, the nighthawks which have taken up their abode in cities have less



These young sparrow hawks were a vicious lot

Jay-Bird Ain't No Singer

JAY-BIRD ain't no singer,
But his clothes is gay;
Flies up in er tree an' yells
All de lifelong day,
Soun's des lahk a dorg-fight
When he 'gins ter squawl,
Othuh buhds dey stands aside—
Let's him do it all!

Jay-buhd ain't no ahtist—
Dey don't bodder him!
Finds er place to holler
On de highes' limb.
Prop he mouf wide open,
Howl des' lahk a cat;
Thinks he's doin' wondhers—
Will you look at dat!

Odder buhds don't lahk him,
Dey des leave him be,
Go erway and let him think
He done bought dat tree!
Ain't he lahk some folkses—
(Find 'em norf an' souf)?
Might mek people b'lieve in him—
Ef he'd shet he mouf!

From "The Quiet Courage,"
by Everard Jack Appleton,
Stewart and Kidd Com-
pany, Cincinnati, Ohio



Baby Tufted Titmouse showing some of his infant hair

work to do because they use their wits in selecting good hunting grounds which man has prepared.

A workman in the building where my office was located several years ago, came in hurriedly



A droll little mite in a mottled suit was Baby Nighthawk

one morning and exclaimed:

"Mr. Speed, one of the men in this building says the young bird up on the roof is a screech owl; but I told him I was sure—"

He was unable to tell me what he happened to be sure of, for I was out of the office and halfway up the stairway to the roof before he overtook me. When we were out on the

top of the building in the glaring hot summer sunlight, I looked carefully in the direction he pointed; but could see nothing except a wide, flat expanse of gravel and tar.

As we moved cautiously toward the point, the mother nighthawk fluttered, with her wing dragging as if it were broken, halfway to the parapet which surrounded the building, before flying to a neighboring roof. The baby which she had been hovering squatted low, a droll little mite in a mottled suit of a salt-and-pepper pattern; in fact, his suit was such a close match to the gravel and tar that he melted into his surroundings when he crouched low and

remained perfectly still. The only motion which I could discover that might have betrayed his presence was a peculiar and rapid fluttering of his throat, very much like the motion of a toad's throat when he becomes thoroughly excited.

I HAVE often noticed that birds, even baby birds, are at times skillful bluffers, like some of their human friends. Down in an old apple orchard where it grew dusky early in the evening, a pair of screech owls talked, whined, and fussed in shaky tones until I was absolutely certain that they were busy rearing a family; but I was unable to locate their nest.

When their young began to fly about, I tried on several occasions to secure a photograph; but the light was invariably poor at the time they grew talkative in the early twilight. At length I did find one sober youngster that had got separated from the family, and was out in the broad daylight. As I approached the small bird, it ruffled its feathers until it was fully half again its ordinary size, it suddenly lifted its threatening horns, it opened its big eyes to their fullest, and it snapped its curved sharp bill fiercely.

Altogether it was a vicious-looking bit of bird life which faced the single glaring eye of my camera. The owllet kept staring as I made the eye in my camera wink and I had been able to secure a picture of the bird at its game of bluff. It was bluff pure and simple, because the moment I took two steps closer the bird flew deep into the old orchard, where I soon heard his trembling call notes notifying his parents that he was looking for them.

Young turkey buzzards are also past masters at the old game of bluff, even if they do look as white, fluffy, and harmless as a lady's powder puff. One nest which came under my close observation gave me an opportunity to watch this game of bluff on the part of young turkey buzzards, for it was tried every time I visited the old limestone cliff under which the parent birds had made their nest.

It was interesting to see the young birds, even before they were able to stand erect, stumble along on their heels, using their wings to touch the ground and thus balance themselves; in fact, these youngsters were quite grotesque as they moved directly toward me, their wings outstretched, and their mouths half-opened, all the while making a sharp hissing noise very much like that of an angry old gander.

Added to the peculiar menacing sound was the foul, offensive breath of these young carrion eaters. Of course, it was all dead-game bluff, because the birds were absolutely helpless, and had to depend on a bold front, a bit of noise, and a disgusting breath to frighten any intruder.

Sometimes I have had peculiar and rare bits of luck, like when a neighbor on the edge of the city telephoned for me to come over in a hurry and tell her what to do, as she had suddenly been forced to become a foster mother to five very small sparrow hawks.

I learned upon arriving at this lady's home that a windstorm had blown the top out of a large tree and deposited a hollow limb containing five small white, downy sparrow hawks in her side yard. She had them in a chip market basket, but was absolutely uncertain as to what should be done. With almost tragic emphasis she said:

"What can I do, the birds haven't a grain of sense? Of course, I know hawks eat meat; but when I offer it to them they won't even open their faces to take it."

Then I had to explain to the good woman that she did not look at all like their parents, that she did not talk like them, and that most certainly the old chip basket on the ground was not at all like their home in a knothole in a tree.

"Then how am I going to teach them that I'm to be their foster mother?" she asked in despair. [CONTINUED ON PAGE 30]



It was hard to see this baby meadow lark in the grass



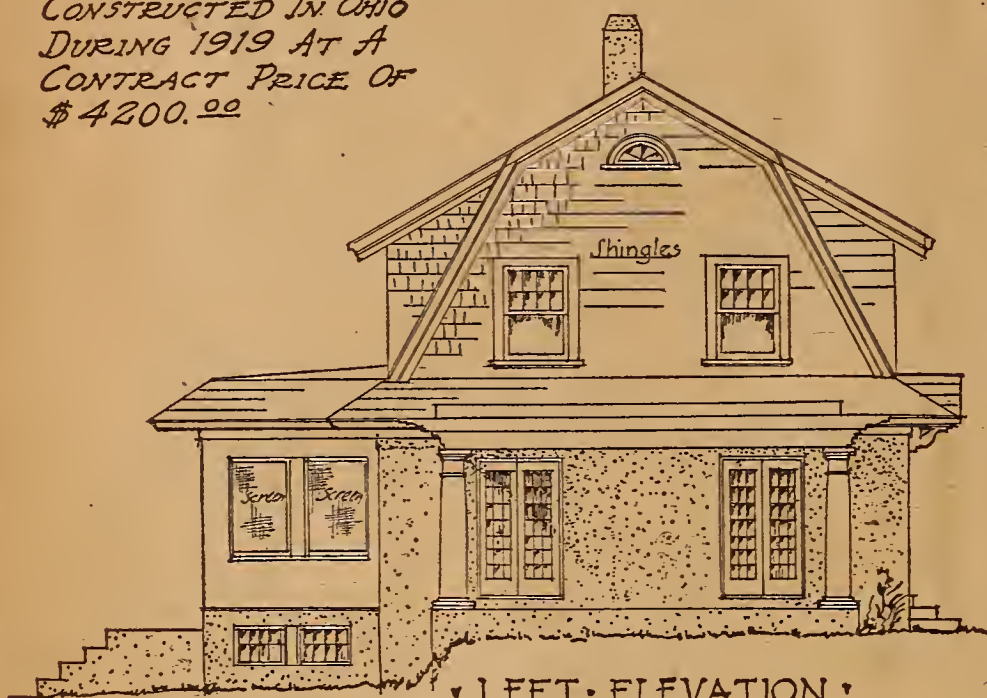
Baby Turkey Buzzard stumbled along, on his heels

A Small Farm Cottage of Concrete and Shingles

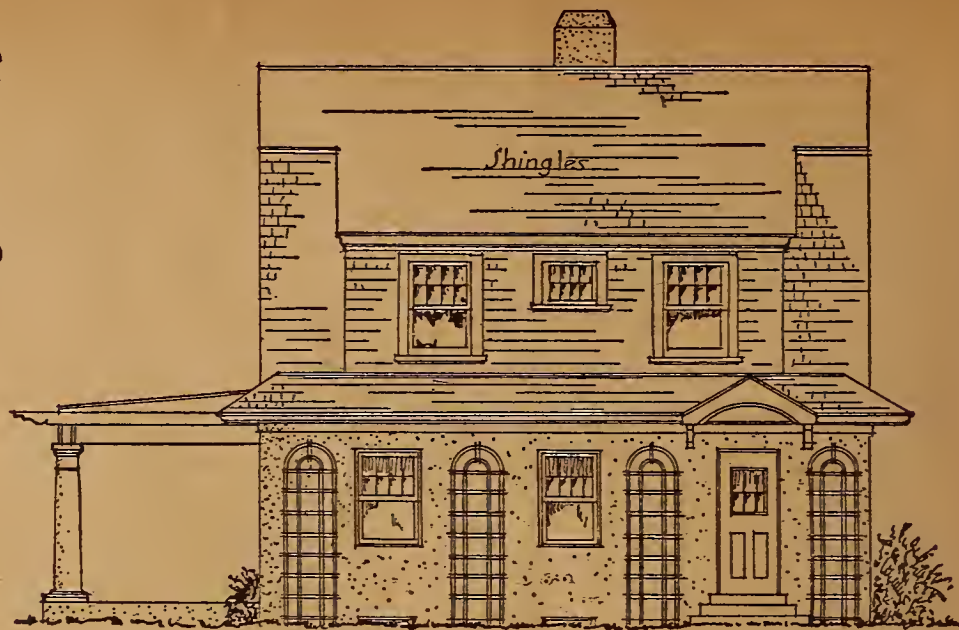
By F. W. Ives

Vice President American Society of Agricultural Engineers

*THIS COTTAGE WAS
CONSTRUCTED IN OHIO
DURING 1919 AT A
CONTRACT PRICE OF
\$4200.00*



◀ LEFT ELEVATION ▶



◀ FRONT ELEVATION ▶

be always shut. Remembering that the efficient kitchen must not have too many doors, it is limited to four, these being arranged so as to leave a maximum of well-lighted wall space. A large double window and a glazed rear door provide very good light. A transom over the rear door secures good ventilation. No pantry is provided, the owner preferring wall cupboards.

The rear porch is screened, and is to be used for dining in the summer-time. A screened porch is a very effective manner of keeping flies from the kitchen. This porch may be reached from either kitchen or dining-room direct.

THE house for which the plans and elevations are here presented was built on a 90-acre farm in a rolling part of Ohio.

The owner wanted something rather permanent and attractive. He had a good bed of creek gravel near at hand, and free for the cost of hauling.

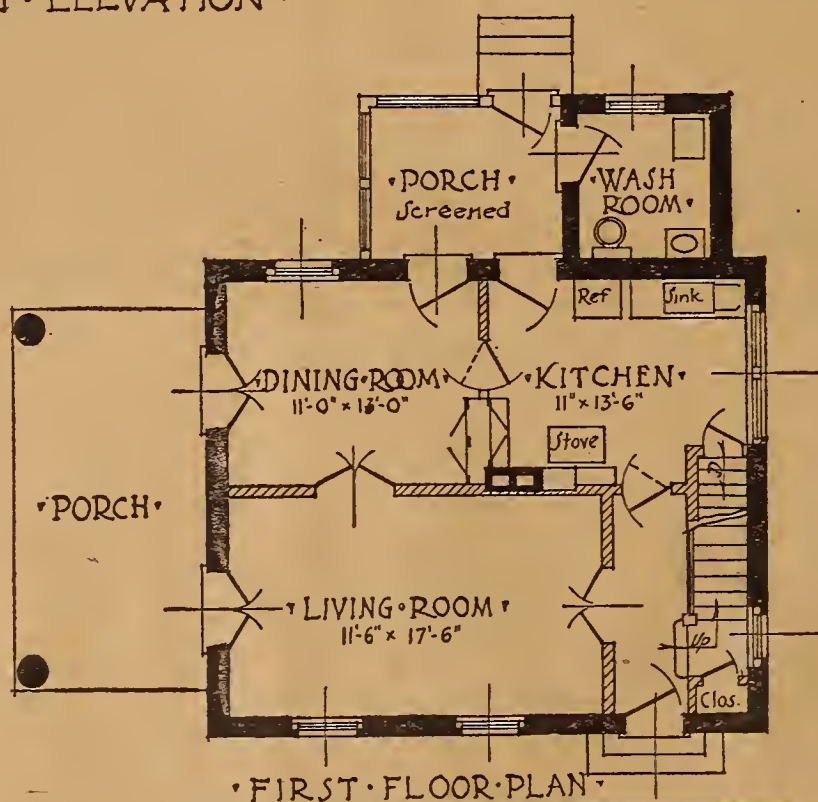
The site selected was in a little apple orchard on a gentle slope toward the west. The house was to face the east, however. A good view from the north kitchen was required. A large laundry and drying-room in the basement, which should be well lighted, was a further requirement set forth by the wife.

A washroom where the men might remove their outer garments when coming in from the fields and stables, and which was supplied with toilet facilities, was to be provided. This room was to be isolated.

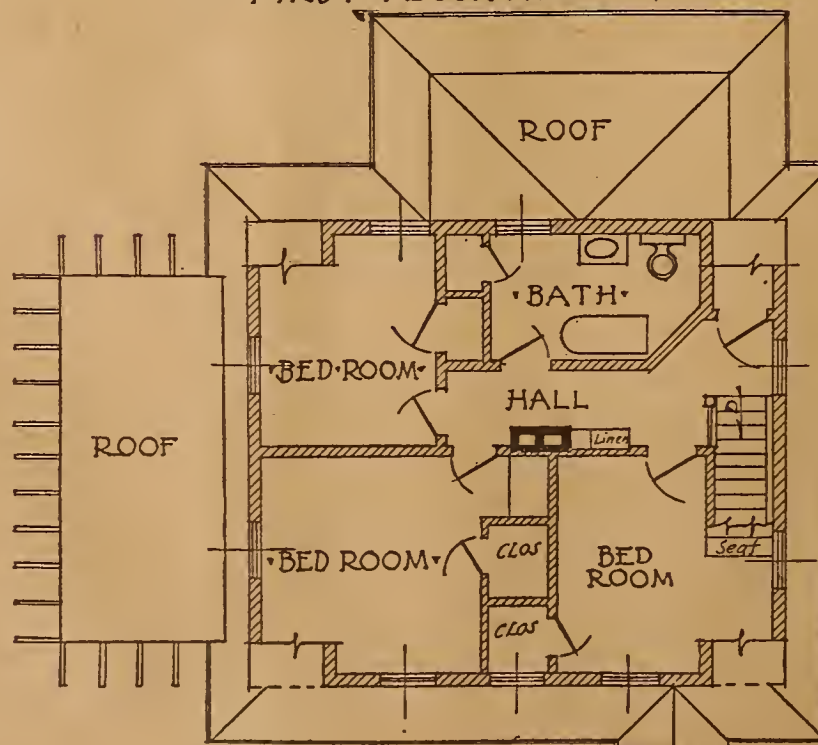
With all this in mind, the floor plans were arranged as shown in the drawings. Entering the house from the front, one steps into a small hall. Conveniently on the landing at the foot of the stairs is a small coat closet. French doors lead into a living-room that is well lighted and ventilated.

Since the house was to be heated by a warm-air furnace, the owner did not care for a fireplace. Double French doors lead from the living-room to the pergola porch at the south of the house.

From the front hall one passes directly to the kitchen by means of a swing door. This door was desired by the owner so that the door might



◀ FIRST FLOOR PLAN ▶



◀ SECOND FLOOR PLAN ▶

On the second floor are three bedrooms and a large bath, each provided with a large-sized closet. The rooms are rather small, but are so well provided with means for ventilation that the greatest objection of a small room is met. A clothes chute in the hall is convenient to all rooms.

The laundry-room and drying-room are located under the kitchen and washroom. It will be noted that the bath, kitchen, and laundry are located for economy of plumbing and water pipes. One chimney, having two flues, is also a distinct economy. The laundry is lighted by large windows in the wall under the porch and washroom.

The house was built on a cost-plus contract for \$4,200, early in 1919. Owing to the fact that the owner had concrete materials at hand, and that common labor was available at the time, the cost was lower than would be possible at the present time. The walls of the basement were of solid concrete on a wide footing. The first-story walls were of solid concrete, furred and lathed. The remainder of the house was sheathed with matched lumber and shingled.

The plans for this house are available at a nominal sum to cover cost of issuing.

Address your request to F. W. Ives, care of FARM AND FIRESIDE, 381 Fourth Avenue, New York City, for cost and other information concerning them. If there are other building problems on which you want help, let us know.

The Judge

Old Frank is not to be fooled—especially in the matter of choosing husbands

By Samuel A. Derieux

Illustration by Henry Botkin

IT WAS as if some modern Joshua had commanded the sun to stand still when the Palm Limited going north stopped at despised Breton Station in Virginia, disgorged from its steel-riveted baggage car three huge trunks, and let slip from its rearmost Pullman a glorious young woman—like some bird of Paradise alighted here in the mud.

Steve Earle, a young tobacco grower from Oak Hill, the Earle plantation, was there to meet her. At sight of her Steve's face lighted with startled pleasure. Well it might. Other men's faces had done the same thing.

The greeting through with, he looked her over from the jaunty hat to the tips of her smart boots, a twinkle in his gray eyes.

"Out with it, Cousin Steve!" she challenged.

"Just looking for your six-shooter and spurs, Stella."

"Oh," she laughed, "I left those in Texas."

They drove three wallowing miles over muddy roads. Then Stella saw for the first time the home of her fathers. Solitary, on top of a hill, columned like a temple, topped with white-plastered chimneys, it brooded over its past and over the purple of rolling hills. It had the landscape to itself. The history, the romance, the drama of the countryside were preserved for the eye by that stately old mansion.

It was all just as she had known it would be. This house—her father had pictured it to her a thousand times: Steve Earle himself with the height and clean-cut features of the Earles; Marian, who ran out on the lofty portico to welcome her, charming as Steve's wife should be; huggable little Tommy, their boy, who stood staring up at her splendor. It remained for Frank to take her breath away.

And Frank was a dog, Steve's red Irish setter. He took the portico steps three at a bound, a majestic fellow with a waving coat of lustrous bronze hair. She dropped Marian's hands and wheeled to look at him. Courteously he wagged his tail, dropped his ears, and raised to her his steady brown eyes.

"Oh!" she gasped. "If Dad could see you!"

She stooped and caught his big head between her white-gloved hands.

She straightened up and looked at Steve.

"YOU know what Dad says?" she asked.

"He says a dog like that can size up a man better than any man or woman. He does! And the funny thing about it is that he believes it. Once two men wanted to be superintendent of the ranch; they happened to come to our house at the same time. Dad managed to get 'em in the room together; when, without their knowing he did it, he let old Prince, his setter, in, and watched through the keyhole. I saw him do it!"

"Did Prince pick out the man?" laughed Steve.

"He certainly did. He went to one of 'em. That man's now superintendent, and the best Dad ever had. The other's in the penitentiary. Truly, he is!"

With a wistful tug at her heart she followed Steve and Marian into the wide old hall which her father, who had been born and raised here, had described to her so many times. In front of a roaring fire in the paneled living-room stood a young man. He came forward to meet them, tall, sunburned, with a mop of crisp hair and a strong face, a bit grim at first sight. Steve was introducing him, Marian was explaining.

"Mr. Cawthorn's the advance guard of a house-party we are giving you, dear. We held him up on the way to South America. I always think of him as hanging like a spider over chasms miles deep. He's an engineer who builds railroads in perfectly impossible places."

As for Cawthorn, he met Stella like a man who has suddenly and unexpectedly seen a vision. He had come to hunt—he remained to pray.

Stella was left alone with him while Steve and Marian saw to the bringing in of her trunks. He stood before the fire, his hands in his pockets, as she looked eagerly about her at the diamond-paned bookcases, the mohair sofas, the dim portraits.

"How do you like this part of the world?" he asked.

She turned to him smiling.

"It's muddy for one thing—Steve and I swam out." He glanced her over quickly as if to size her up.

"Is—er—that your verdict—muddy?"

"No—it broods—I love it. And this old friendly house! Isn't it a wonder? I wish I had lived when it was in its glory."

"Do you?"

"No."

His quick smile was partly grim, partly boyish. It made him look ten years younger. Stella liked it. It was comprehensive, as if we are all funny fellows together.

"Your room's ready, dear."

Frank knew she was worried—he saw the wistfulness in her eyes. He must let her know he understood. He laid his silken red head like an offering on her silken lap



It was Marian in the doorway. As she followed her, Stella threw an answering smile over her shoulder to Cawthorn. He seemed to be a solid sort of grave young man.

Up-stairs in the tall-windowed bedroom Stella threw her hat and cloak on the high-posted bed, and faced Marian flushed and smiling. The afternoon sun flooding the room brought out the lithe vigor of her figure, burnished the luxuriant coils of her dark hair, lighted her level hazel eyes—eyes at once frank and alluring. She looked about the lofty room, through the window at the columns of the portico, down the avenue of oaks to the sunset hills.

"The beauty that was Greece," she said, "and the grandeur that was Rome. You see, Marian, I've been to school even if I can lasso a steer."

It was after Marian had left her, and while she was unpacking her trunks, that there came a soft, tentative scratch at the door. Smiling, she crossed the room and opened it.

"Come in, old man!" she said gently.

Frank sauntered sedately in; he whiffed her trunks, he examined her hat and cloak on the bed. Nothing must go on in this house without his inspection. Then he glanced up at her beseechingly, as if, having done his duty, he must now beg pardon. She nodded, smiling. He walked over to the fire, and she drew up a low rocker beside him.

who makes fortunes out of impossible investments."

"And Steve," interrupted Cawthorn, filling his pipe from the jar of home-grown tobacco on the mantel, "is a planter who grows famous tobacco on impossible land."

"All three of them played football on the same team," explained Marian. "They've stuck together ever since."

The front door opened. In the hall Stella saw a chauffeur setting down grips and gun cases, with a splendid white Llewellyn setter tugging at his chain; then Steve and a tall man in a fur-lined overcoat, his gray Alpine hat in his hand. His entrance set the room in a friendly turmoil.

"Hello, Marian! Glad to be here. Hello, Cawthorn! How's the world serving you?"

Steve had introduced them. Stella extended a frank, friendly hand. She knew this type of man. She could well stand the lingering scrutiny of his dark, urbane eyes. She saw delightful days ahead. He pulled off his overcoat and stood before the fire, perfectly at home, clean-cut, handsome, distinguished. Exclusive clubs and exclusive tailors had set their stamp on him. Sitting by the table, looking up at him with a slightly heightened color, Stella had a quick intuition, a hunch she would have called it, that things must go this man's way.

"Burlingame, what's this I hear about engineering a new foreign loan?" asked Steve.

"That's what I came to get away from," he laughed, his eyes on Stella's face.

STEVE and Cawthorn went on with the loan, like men loath to turn a serious topic loose. Marian, busy housewife, had left the room. Burlingame drew a chair up before her and leaned forward. The talk of the other men came to her only in fragments. Burlingame knew everybody. The Congressman from her town? He was talking to him last night at the club. He called her celebrity by his first name.

"Out home," she smiled, "we think he appoints the Presidents."

He threw back his head and laughed.

"You shoot, don't you?" he asked.

"I'm from Texas, Mr. Burlingame."

"Did you bring a gun?"

"No; nor a Bowie knife nor a lariat—only gowns."

"And drama!" he added, his admiring gaze searching her firelit eyes. "You shoot quail, don't you?"

"I've shot Chinese pheasants in Arizona."

"When?"

"Last winter—Dad and I," she added.

"Last winter? I shot pheasants in Arizona myself last winter, and didn't know you were anywhere about. Well, you must have a gun. There's a twenty-gauge in my rooms in Washington. I'll send a telegram to-night and the gun'll be here to-morrow."

He rose and leaned against the table, looking down at her.

"Have you seen my setter, Gladstone? You know Steve's dog, Frank, has always put it all over every dog we could bring out here. But I've got one now—well, it'll be a different story. Gladstone walked away with the Eastern championship this fall. Steve, where's the phone?"

Stella looked up suddenly. Cawthorn's eyes were upon her face. He had deep-set, gray eyes. There was distinction in them. They must have recorded many a strange picture. They were young eyes, too—unspoiled, you would say. There was a boyish sort of eagerness on his strong, sunburned face. He must not have paid much attention to the loan after all. He must have been looking at her all the time!

The gun which Burlingame had sent for came out next morning, and in the afternoon he and Stella and Cawthorn hunted over rolling hills of broomstraw and through woods of pine and oak. From the first there was rivalry—which dog would find the most coveys, Frank or Gladstone? [CONTINUED ON PAGE 26]

Southern Cover Crops That Saved Me Buying Feed and Fertilizer

By T. C. Hart

WE WERE eating our lunch in one corner of a 40-acre field where we were plowing under a cover crop of cowpeas and velvet beans. I had three extra teams and their drivers hired to help finish the job, and as we sat there during the noon hour I knew that every one of those fellows thought that I was a little "off in the head."

When I had planted that field to a mixture of cowpeas and velvet beans in the summer after putting on a coating of about 500 pounds of acid phosphate per acre and harrowing it in, they had all thought that I was a little off, but when it came to plowing in all that mass of tangled vine growth they were sure of it.

The vines were so thick that the horses could hardly walk through it, and before we could plow the field we had to go over it with a disk to cut the vines down, and then hang a heavy chain on to each plow beam to help drag the vines into position so they could be turned under.

The fellows had fed their horses some corn, and sparingly shook a little hay in front of each team. The hay was supposed to be No. 1 timothy, but in the North, where it came from, it wouldn't have graded a poor No. 2. The price, however, had been way up—it always was on hay down in the Gulf Coast country, for all the hay used was shipped in from the North or West. And, incidentally, the shippers sold all the good hay near home and dumped the cull stuff on us at fancy prices.

After the horses had finished their corn they ignored the so-called timothy and pulled over to where there were a lot of cowpea and velvet-bean vines, and started to eat them as if they had found a choice dessert. My plowmen opened their eyes in astonishment to see the teams leave "good hay" and go after the pea and bean vines.

"If they like that stuff so blamed well, why wouldn't it be good to cut when it's green to make hay of?" one of the men asked.

I told him it *would* make good hay, and that not only would the horses and mules prefer it to the imported hay, but the cattle as well.

"Well, then," he came back, "why, in time, are you-all plowing that good hay into the ground?"

"To build up the soil," I told him, and the look of amazement that he gave me and the side look that he gave his fellow plowmen spoke as loud as words that he surely thought I was "cracked."

THAT was the first glimpse we farmers of that particular part of the South had had of the use of cover crops. We had farmed for years and years, but all we had put into our soil was commercial fertilizer which we dumped on the ground annually in immense quantities.

Very little stable manure was used on the land, for the simple reason that there was very little stock to furnish such manure. What stock there was roamed at will through the cut-over pine lands, and the use of cover crops was unheard of.

Shortly after getting the 40-acre tract plowed I put the teams and men to work on a 20-acre tract. This 20 acres was planted late in the season to cowpeas, and the growth was still green when we started to plow it in. My idea was to plow this in for green manure, and so build up the soil somewhat. I wanted to plant that 20 acres to orange trees in January, and I figured that in plowing in this green crop in September I could disk it thoroughly several times before January, and thereby overcome any acidity in the soil that the green manure might have caused.

But when I started turning under I surely met a storm of protest. It had been bad enough to plow in the dried vines on the 40 acres, but to turn in a green crop—well, I was certainly inviting every calamity that ever happened. "It never had been done" in that country, and for that reason it couldn't be done. I'd have my soil "so acid that it never would raise anything, say nothing of orange trees."

Those were a few of the things that were told me, but in spite of it all I went ahead.

In January, when it came time to set out the trees, an old nurseryman of that country said my soil was in the finest condition he had ever seen.

That twenty was set out to a combination pecan and Satsuma orange grove, and has for several years been pointed out as one of the best groves of its size and age in that part of the coast country. The green cover crop that was plowed in to start off and the other cover crops that have helped

to believe that maybe after all there was something in the cover-crop idea; and when they saw cornfields and sweet-potato patches that yielded far more than the average crops on only about half or less of the usual amount of commercial fertilizer, they were convinced.

And when it was shown that the cattle could thrive during the winter on cowpea, velvet-bean, and soy-bean hay, where before they had run down and many of them

Many farmers are now coming to the point where they raise a big field of cowpeas or velvet or soy beans, or both in combination, for winter pasturage.

Another place where the cover crop has proved its worth is in the orchard. Orchards which have been built up by the persistent use of cover crops have been found to withstand the hard freezes which have hit the coast country in the past few years. Groves which had been somewhat neglected, and were not in the best of shape, have been total losses where groves that had had systematic cover-cropping and proper fertilization and cultivation came through with but small damage in proportion to the others.

While it is probable that cowpeas, velvet beans, and soy beans have been the greatest help of the cover-crop family in the South they have been ably assisted in a host of cases by the many different clovers, and more recently by rye and beardless barley. The clovers, slow growers, have proved their utility where a cover crop is to be of a more or less permanent nature—that is, where the land is not to be used for anything else too soon.

THE most recent addition to the cover crop in the South is rye and vetch. These two cover crops offer an immense opportunity to the Southern farmer. A great many agricultural experts have found that hairy vetch is the greatest of all the legumes as a gatherer of nitrogen, and as an orchard cover crop it has done some wonderful things in the middle belt of States. Southern orchardists will do well to look carefully into the merits of hairy vetch. It is the most hardy and thrifty of the vetch family, and will thrive under a great multitude of varying conditions of soil and climate.

Rye as a cover crop acts somewhat differently from the other cover crops of the South, inasmuch as it does not gather nitrogen from the air as do the legumes, but it does take up a great deal of nitrogen from the soil, and the amount of nitrogen taken up per acre by rye is sometimes greater than the combined amount taken from the soil and air by some of the legumes. In that manner nitrates which would be lost from the soil in winter are conserved by the use of rye as a cover crop during the winter.

Rye is one of the best crops for green manure, and it is also very valuable to keep soil from washing, and thereby conserves a great deal of plant food. Rye in the South will make an excellent growth during the fall and winter months, and can be plowed under in February, thereby getting it out of the way of any main crop that is to follow.

One thing, however, must be watched in the use of rye as a cover or green manure crop, and that is that it must be plowed in before it is fully mature. From the time it is knee-high until it begins to head is the most favorable time to plow it under.

If rye is allowed to grow too long it may reduce the moisture and the plant food in the soil to so great an extent as to defeat the purpose for which it was grown. But if plowed in at the proper time it will be found to be one of the best cover or green-manure crops. Thorough disking of the land after a cover crop of rye has been plowed in will help greatly to hurry its decomposition and have the ground ready for the next crop.

If you are afraid of acid soil following the plowing in of a green-rye crop, a top-dressing of 500 to 1,000 pounds of lime per acre, well disked in, will help to remedy the acidity—only don't use lime if you intend to follow with potatoes. Any other crop will probably be benefited by the use of lime.

All Right, Cuba, Come On!

CUBA is developing her livestock industry. Stock to the amount of \$18,000 will be purchased for breeding purposes, and transported to the breeding farms at Ciego de Avila and Bayamo. The stock will be selected by the chief veterinarian of the Cuban Government.



The author of this article, Mr. Hart, standing in an Alabama cornfield. The photograph was taken on the ninth of June, and shows the effect of cover crops as "boosters"

A Good Judge Waits Until He Has All the Evidence

WE HEAR a good deal of talk here and there about how hard it is to get the average farmer to try anything new. Mr. Hart dwells on that point not a little in this article, and we gather that it annoyed him quite a bit.

Personally, we are inclined to admire the farmer rather than to condemn him for his deliberate way of looking a thing over carefully before he takes it up. It is a sign of good sense. It is all too common a characteristic of most of us Americans that we do things first and think them over afterward.

We don't believe that because a farmer is careful that he is necessarily hidebound, and opposed to anything new because it is new. We prefer to think that he is more like a just judge on the bench—sitting with an open mind and waiting until he has all the evidence before handing down his decision.

And Mr. Hart's own statement that the South is taking to cover crops, diversified farming, livestock, and dairying seems to us to prove that the farmer is not so slow to take advantage of a really good thing as he might seem.

THE EDITOR.

to maintain its fertility since have not damaged it as the cover crop critics expected. The owner refused \$4,500 cash for his 1919 crop of oranges on the 1,000 trees.

A neighbor of mine, who had been building up his soil by plowing in cover crops and all the growth he could for three or four years, pulled a big surprise by planting a crop of sweet potatoes and not using an ounce of commercial fertilizer. Everyone predicted dire disaster for that crop of sweets, but at marketing time he dug out nearly 300 bushels per acre, and once more the critics couldn't see how it was done.

I have related these little personal experiences because they show what the general sentiment was when cover crops first began to be mentioned as a means of soil fertility in the South.

When my neighbors saw the vastly improved condition of the soil that had had cover crops turned in, and that even the color was turned from the light sandy appearance to a dark loamy look, they began

had actually starved because of a scarcity of feed during the winter when the natural grasses all dry up, the cause of the cover crop took a decided boost.

A favorite method of planting cowpeas, velvet beans, and soy beans is to plant them between the corn rows at the last cultivation of the corn. By doing this a good growth is made before fall, and the vines can be used for hay after the hay is harvested, or the cornstalks and the cover crop can be fed off the field. This is one of the best ways which the Southern farmer has found to keep his stock in good shape during the winter. When feed on the open range begins to dry up in the fall or winter, he can turn the stock into his field of stalks and cover crop and let them eat it off. It is estimated that under this method not only is the stock fattened up, but over 80 per cent of the fertilizer value of the crop is returned to the land in the stock manure. By this system the farmer kills two birds with one stone.

To Every Farmer's Son Who Wants to "Quit and Go to Town"

By Joseph E. Wing

THE trouble with some of us is that we know too much, have had too much happen to us. We have lived too long, and thus have seen too many hot winds and droughts and army worms and chinch bugs and floods. We are pessimists because of all the things that have happened to us, or happened in our times.

The young man is luckier than we; he has not seen all the evils that may happen in the world, so he is not oppressed by knowing of them or dreading them. The world is for the hopeful. The optimist will inherit the earth. Beyond a doubt, there are more sunny days coming than stormy ones, more years when it will rain enough than years of drought.

The one with courage, faith, and optimism wins, just so he is not too much of an optimist!

You, young man, are naturally an optimist. You feel things are worth doing. You believe that things will win out. To the young man is given most the happy faculty of seeing things—not as they are, but as they ought to be. You have vision. On your father's farm you see in your mind's eye fields of alfalfa where no alfalfa is growing now. You picture on the home farm modern buildings and equipment. You will have some day a good barn for storing hay, under which you can feed cattle. You may aspire to yards made mud-less with concrete.

You see in your vision trees sheltering your farm, visions of fine trees and spruces on the north and west sides. You see an orchard, for every farm deserves an orchard. You see a comfortable farmhouse, modern, beautiful, with good architectural lines, with commodious porches, cozy fireplaces, a shower bath and sleeping porches. You get a mental vision of a good road running by your farm, smooth, hard, good for the automobile.

You have a vision of an automobile run on that good road, and a neat garage to hold the automobile. You have a vision of good, purebred cattle in the pastures, and fine, broad, splendid, purebred horses and good tractors tilling the fields. You want all these things, and you want them soon—the sooner the better.

WELL, all these good things may come to any young man if he will have patience, if he will get behind the wish with intelligence, directing wisely his efforts, getting behind with push. The future of agriculture in the United States is a bright future. The competition of the world with our grains and meats cannot materially harm us, because the world is so much in need of food. The hunger of the world grows apace. In all the world, men are learning to eat more expensively. Europe cannot much increase her production of food over her pre-war production. Already she is producing about double the wheat to the acre that we are producing.

I am an optimist as to America and her future. We are only beginning the development of our farming. In France I saw farms that grew an average of 48 bushels of wheat to the acre. Those farms were farmed with intelligent, loving care. They were manured. They were given phosphorus. They were rotated with alfalfa once in six years. They were plowed, once in six years, 20 inches deep. To farm in that manner takes capital, and it takes courage. We will reach something like it in the United States some day. We will have first to learn to use manures wisely, to reinforce them with phosphorus, for even rich prairie soils will some day need more phosphorus than we now have.

On Woodland Farm we have grown on 50 acres of land 5,100 bushels of corn. That land has been farmed for a century. A little manure and the magic of the alfalfa roots did that. I remember well when the total production of that farm was under 500 bushels of corn and 50 tons of hay.

There are few farms where one cannot increase his crops. Sometimes he needs no more fertility—he needs only more moisture. I believe that he can conserve more moisture by doing deeper plowing. I remember how my French friend plowed twenty inches deep. On Woodland Farm



Church of our Saviour, Mechanicsburg, Ohio, where Joe Wing and his family worshiped. Here some of his finest inspirational writings were read

Joe Wing was a lay reader in the Protestant Episcopal church, and it pleased him greatly to read the service in the absence of the regular minister

we have plowed sixteen inches. We find that the deeper we plow the more moisture the land absorbs and the less runs away.

Oh, there are a hundred things for the young man to test—to prove out. We have not yet really begun to farm. We have been merely *cropping* in the past. Really to farm will take more labor and more capital than we have had. Where will we get more capital? We must get it from the land, that is the answer. Where will we get more labor? Ah, I do not know the answer to that question.

NOW let us come right down to the young man and his job. Out in the world you may be amazed to learn that men do not much care how you look; you may be red-headed or white-headed, your eyes may be black or they may be blue, no one will much observe or care. Nor, to your astonishment, will men care much for what you know. The mere fact of your having graduated from an agricultural school is not going greatly to strengthen your case in the estimation of men in the world. No, what the world will ask is that old, eternal question: "What can you do?" And one only learns to do by *doing*.

I pity the young man who has not had opportunity to learn to do things. He has only half developed. He is like a sickly plant that has grown up in the shade, he lacks self-reliance and backbone. How can he have self-reliance and backbone when he has not back of him memories of having successfully done things?

The first job that should be addressed by the young man is to take a wife. You may choose her even though you do not marry her. If you choose the right one she will wait for you. To tell you the truth, there is a lot of delight in mere waiting, when she

is the right one and you are sure of her and sure of yourself. There is no pleasanter duty on earth than this, as I am sure you will agree.

I believe in early marriages. I believe in the young man choosing early the one who is to become his wife, choosing her and then so ordering his own life as to be worthy of her. Just how good ought a young man to be, just how pure in his way of life? Well he ought to be just as pure as the girl he chooses to marry him, and she ought to be as good as her mother. Purity of living is the greatest means of happiness that I know. Wrong living is the surest road to hell that I know.

How will a young man choose, from the young women that he knows, the one that is to be his mate? I will tell you the one thing that above all others should decide him. Let him ask himself: "Is she the one that I wish to become the mother of my children?" That is what mating and marriage means, thank God, in the country. Children come, they are the best gifts of God, and one wishes them to have the best, the worthiest heredity. So let him choose his mate that he will be proud of his children.

THINK long over this. Reflect on what the girl is, or appears to be, and what her parents are. I do not mean that we should look too much to superficial things—fine clothing, the polish of society—these may deceive if one is not wary. It may easily be that the girl with really fine, strong heredity comes of stock that has not much money. Just fall in love, as you must, with half the girls you meet. It is your lot to do this, but before you ask one of them to marry you, reflect carefully on this vitally essential problem.

If to that the answer is emphatically "Yes," then lay siege to her heart, marry her. Carry her off by force. You can do it. A determined young man, a real manly young man, dead in earnest, can pretty nearly marry any girl he ought to marry.

Your home need not be extensive, make it intensive. A little house of four rooms, or of two rooms, with the right girl in it and the right man married to that girl, comprises as much of heaven as can well be found on this earth. I hope that the little house is set down on your own land, or on land that one day you can own. About it, then, you can plant things and watch them grow. There is great joy in planting things of your own, about your own little home, in seeing them develop—the trees, the vines, the shrubs and flowers.

Then let little children come to that home of yours. After one is married, the sooner children come the better for all. There is more to be learned from being the father of children than can be learned in any other way. One only begins really to live when his children come. Then he awakens to the deep and sacred meaning of life and manhood. Then he begins, I hope, to plan his own life anew, with two objects in view—to be worthy of the wife he has taken, and live so as to be worthy of imitation by these children growing up.

YES, let children come as early as God sends them, is my advice to the young farmer. Confidentially, there is a reason in dollars and cents, too. Soon the lads growing up about your knees will be big enough to drive up the cows, then to sit on the hay rake or the breaking plow. When you are fifty you ought to have sons bigger than yourself, able and glad to take the cares off your shoulders. It is fine to watch their development, to see them help bring fulfillment of your plans. Now, that is what I hope to see you do—to stick to the farm and go to work with new energy, new hope, new enthusiasm. To make each farm a center of better farming, and each home a center of better living.

But what of the young men who own no farms, whose fathers own no farms—what sort of an outlook is there for them? It is really very splendid. There is no end to the openings for trained young men. Young men who know practical agriculture are hard to find, and are in big demand. They are wanted to manage big estates and farms. They are wanted to assist experiment stations. They are wanted as county agents and demonstrators. There is need that they shall first have grasp of the science of agriculture, of the reasons for doing things. Then there is absolutely need that you shall know practical farming as well.

Get work on the best-managed farm that you can find. Do things. Do as many different kinds of work as you can do, and learn to do them well. There is a lot of fun in that too. There is more real pleasure in running a plow, and in running it well, than in playing baseball. There is a lot of fun in running a mower or binder and learning all there is about them, learning to run them perfectly. There is no drudgery about farm work well done. Drudgery comes in when one does his work poorly.

When you take up, as I hope you will, the problem of making money on farms, you will be amazed to see that it is yet a difficult problem in America. You will find that men toil, and toil too hard, upon farms. You will find that their wives toil, and toil too hard. There are problems here for you to solve. These problems are all solvable, we feel sure.

Right planning of farms and farm practices will result in more profit. Farms can be so managed that their owners will not have to work too hard. Farm homes can be replanned so as to relieve the housewife of a part of her toil. I am sure that a farm can be so planned, so arranged, so schemed, that it will keep and increase its fertility, will make money, and afford a good living to its owners, and yet no one need overwork, all doing their share. Ideals, culture, things worth living for, cannot come unless there is some little leisure for books, for thoughts, for living upon the farm.

That is your [CONTINUED ON PAGE 39]

What's an Agricultural College Education Worth to a Practical Farmer?

Does an agricultural college education help farmers succeed?

By Andrew S. Wing

DOES an agricultural college education help a man to succeed or does it merely fill him up with a lot of theories that can't be worked out?

Do agricultural college graduates return to the farm, or do they get white-collar jobs in town?

These two questions are asked every year by thousands of boys of college age, and by their families. That many of them decide that a college course does pay is shown by the rapid growth of all our agricultural schools and colleges. And in the same mail I find statements from two leading corn-belt colleges that bear out this belief. Ohio reports that a survey of 1,000 representative farms in that State shows conclusively that college-educated farmers do make more money, and Missouri supplies conclusive proof that agricultural college men are going back to the farm.

More than 1,000 farms were analyzed by the Department of Rural Economics of the Ohio State University to see if the education of the farm operator had any effect on farm profits. Nine hundred and twenty-eight of these farmers had received a high-school education or less. The average labor income of these men, after all expenses and five per cent on the capital invested had been taken out, was \$502. One hundred of the men studied had received a college education along some line other than farming, and their labor income was \$644. The 27 men who had received an agricultural college training had average labor incomes of \$1,422.

The agricultural editor of the University of Missouri quotes Dean Mumford thus:

"More than 400 young men who received training in the College of Agriculture during 1919 will engage in farming in Missouri this year. These figures are in disagreement with the statement which is sometimes made that students who come to the College of Agriculture leave the farm. The percentage of alumni and former students who are actually on farms varies in different colleges of agriculture from 60 to 80 per cent.

"It is interesting to note that in a recent survey made of the alumni of Yale University, only two per cent of the graduates were in any way engaged in agricultural work.

"It is apparent that students preparing themselves for the vocation of agriculture will find in the colleges of agriculture the opportunity sought."

The writer went to agricultural college from the farm, intending to be a farmer. Circumstances developed after my graduation which prevented my going on a farm, although I went into agricultural work. If I had had a farm, probably I would be on it to-day, instead of being cooped up in an office in a noisy city. I know that there are many agricultural college graduates who are in the same boat. They would prefer operating a farm, but, not owning one, they choose some other line of work until they can save enough money to buy one. Of course, our research and experimental work must be carried on principally by college-trained men. Some of the graduates must become teachers to help instruct the next crop of farm boys and girls.

There is need for the agricultural college graduate in so many lines of work that we cannot expect all of them to actually till the soil. But it is encouraging to know that many of them are returning, and that they are making good.

Are Our Own Yards in Order?

I wonder sometimes if you and I are not prone to forget in this period of reconstruction and unrest some of the basic principles of farming.

Of course there are certain things which must be threshed out if American agriculture is to continue to forge ahead. Provision must be made so that prices for farm products will be sufficient to give the producer an attractive income on his invest-

ment, and a decent wage for his labor.

It will not be an easy matter to do this. So many things are involved that it will be a slow process at best. We need better transportation facilities, we need more efficient methods of getting food from producer to consumer, we need constructive laws to encourage selective immigration so that the cities can satisfy their labor wants

high price of farm commodities, and then decline to make a study of economical ways of buying feed, machinery, or fertilizer for ourselves.

I do not intend to imply that many farmers are doing this. On the contrary, the great majority have kept to their knitting better than any other class of people. Without leaning too much either toward



This is the type of "book wagon" used in the Middle West. The teacher is shown instructing her pupils with books taken from the shelves of the traveling library.

A Library That Will Come to You

THE time is coming when you won't have to go to town to get a book from your public library. Before long you'll just step out to the road that runs past your home and get your book from a traveling library, such as the one shown here.

A few districts are already supplied with "book wagons," but if the American Library Association follows out its present program it won't be long before they'll be a common sight along most any country road.

There are sixty million people in the United States who haven't any ready access to a library, according to the association, and it hopes, with the aid of existing library agencies, to take books to those who can't come and get them, and thus put the best literature within reach of all. The present plan is to have one traveling library for each district, which will make its rounds at regular intervals. Two persons, a driver and a librarian, will accompany the "wagon" on every trip. A drive is now on to raise two million dollars, the amount necessary to carry on the work over a three-year period. A. S. W.

and return the farm workers to the farms. We need better roads, fewer and better rural schools and churches, and we need a wise foreign policy. The American Farm Bureau Federation is studying these problems, and intends to see that American farmers get a square deal. Other organizations will do all that they can to help.

But it will never be possible, even if it were desirable, to enact laws that will enable incompetent farmers to prosper. That would be as unwise and as economically unsound as passing legislation to encourage inefficient and unnecessary commercial enterprises.

In the final analysis, success in any line is an individual problem. We must watch the game as a whole so as to get team work, but it is even more important that we watch our particular job and put our whole heart and soul into every play that we make. Why spend all our time worrying about the declining price of hogs, which we can do little to prevent, and lose out completely because we neglect to prevent hog cholera or fail to feed economical rations? It is futile to wave the red flag because our roads are not all paved, and then neglect to fill the chuck hole in front of our own gate. Nor is it wise to complain about the

capital or labor, they have stood for the legitimate rights of both. But if we listen too attentively to the radical element that want and need legislation to help them make a living, we are apt to forget the importance of making the best of conditions as they exist.

Legislation is needed, laws now in effect need to be enforced, and agencies in existence need to be oiled and put in motion. We must all do all we can to put men in public office who will sincerely devote their energies to the vital issues that must be solved in order to steer us safely through a painful reconstruction period. But at the same time we all have our own particular job to handle, and isn't it good policy to have our own yards cleaned up and in order before we start out to reconstruct the world at large?

Are We Giving Our Kiddies a Square Deal?

Contrary to popular belief, farm children are not always more normal and healthy than children raised in the city. The draft examinations showed up the men from the country districts in a very bad light.

There are two principal reasons for this: one is the lack of properly directed physical training and recreation in rural communities, and the other is improper feeding.

Wapella County, Iowa, recently demonstrated in a conclusive manner what proper diet will do for undernourished children. This county is prosperous, and comfortable homes are the rule and not the exception. The home demonstration agent and county nurse, with the aid of ten volunteers, weighed and measured 2,189 children in the county. The results obtained were rather startling. Of the children examined, 407 were below weight. Out of one group of 137 children in rural districts, who were weighed, measured and inspected, only five were found to be normal.

To demonstrate what can be done for a child with proper diet, two nutrition classes were started in Ottumwa schools. In one were eight children, each from 5 to 14 pounds under weight. They are being given one pint of milk daily for three months. One cup is given in the morning recess and one in the afternoon.

At the other school, a lunch is served at 10:15 each morning to the class selected. It consists of a large dish of well-cooked oatmeal with sugar and whole milk, a glass of milk, and graham crackers. The children are very eager for this plain, wholesome food.

The records of gain are interesting. Every child has made at least a two-pound gain. One nine-year-old boy, six pounds under weight, has gained eight pounds; and one eleven-year-old boy, seventeen pounds under weight and in extremely poor physical condition, has gained nine pounds, and his general health is much improved.

What Concrete Does

A FRIEND asked us the other day what we thought of concrete on the farm. This seems to be a rather generally asked question, so we will say here what we answered, and possibly it will answer the same question in your mind:

"Anything that makes for greater permanency in farm construction is fundamentally sound and good. It means that that construction will not have to be replaced so soon as in the case of less-durable materials. Hence it saves you money. Therefore it is good.

"Concrete, rightly used, has the qualities of permanency, economy, and efficiency.

"Although farm uses for concrete are many and varied, the surface has only been scratched so far as its use on the individual farm is concerned. It combines efficiency and economy with simplicity of installation. That is to say, with a little preliminary study the average farmer can put in his own concrete. Water troughs, feed troughs, fence posts, walks, feed-lot floors, machine and implement floors, manure pits, and building foundations have proved their value—and they constitute only part of the list.

"On the whole, we should say that concrete on the farm is a step forward in the right direction—that is, toward efficiency and prosperity." G. M.

When Shall I Lime?

"BIGGEST corn increases by limestone are gained by applying it to clover and other legumes," says W. A. Albrecht, of the University of Missouri College of Agriculture, in answer to the many queries from Missouri farmers who wish to know what time of the year is best to put limestone on the soil. "Good results can also be obtained by putting lime with corn, wheat, and other crops, so that the crop is not always the deciding factor," Mr. Albrecht says further.

As to the time of year it should be applied, he recommends that it be done when it can be properly put on the ground with the least labor and least interference to other field operations.

How-Do-You-Do!

Prize Pictures of Farm and Fireside Folks, by Farm and Fireside Folks

THEY are "chums," near Plainfield, Vermont—Florence Lafayette at the left; next is the watchdog, Rover; the little boy's name is Merlin Wells. Merlin didn't want his picture taken, and his mother spoke crossly to him—well, his face shows how it makes him feel to be scolded. Every time they try to take the children's pictures, Rover comes to take his place beside them.

Photo by Maurice Townsend



HERE is part of one of G. L. Storkey's bumper crops of girls and boys, on his farm near Paris, Ohio. They are Burdette and Burdella Starkey and their big sister, Lela. They are not the only twin girls in the family, but they are all the apron would hold. There are also a few "single" sisters, and each sister has three brothers. Now beat that, if you can!

Photo by W. R. Sheatsley

HERE is Sadie Pritchard and her purebred Guernsey, Melrose Lassie 83567, on the farm of Sadie's father, John Pritchard, at Eau Claire, Wisconsin. Sadie is quite accustomed to being kissed by members of her immediate family, but this appears to be a surprise attack on the part of Lassie, and Sadie doesn't quite know what to do about it.

Photo by Sadie's Father



THIS is Johnnie Polko of Brighton, Michigan, and his pet Buff Rock rooster, Beauty. Roosters, hens, and chicken-folk generally are not credited with having any sense, but Beauty has sense enough to know a good thing when he sees it, for he likes Johnnie, and follows him all over the farm; We'll vote for both Johnnie and Beauty, on either ticket.

Photo by Jennie B. Austin



THIS seems to be a very serious job of yard-cleaning that young Mr. Brown is doing for his mother, Mrs. Bert Brown of Kenmore, North Dakota. Perhaps he is worried about the weight of this particular load, but judging from the look of determination on his face we'll bet he gets away with it, and with whatever else he tackles.

Photo by Mrs. Bert Brown

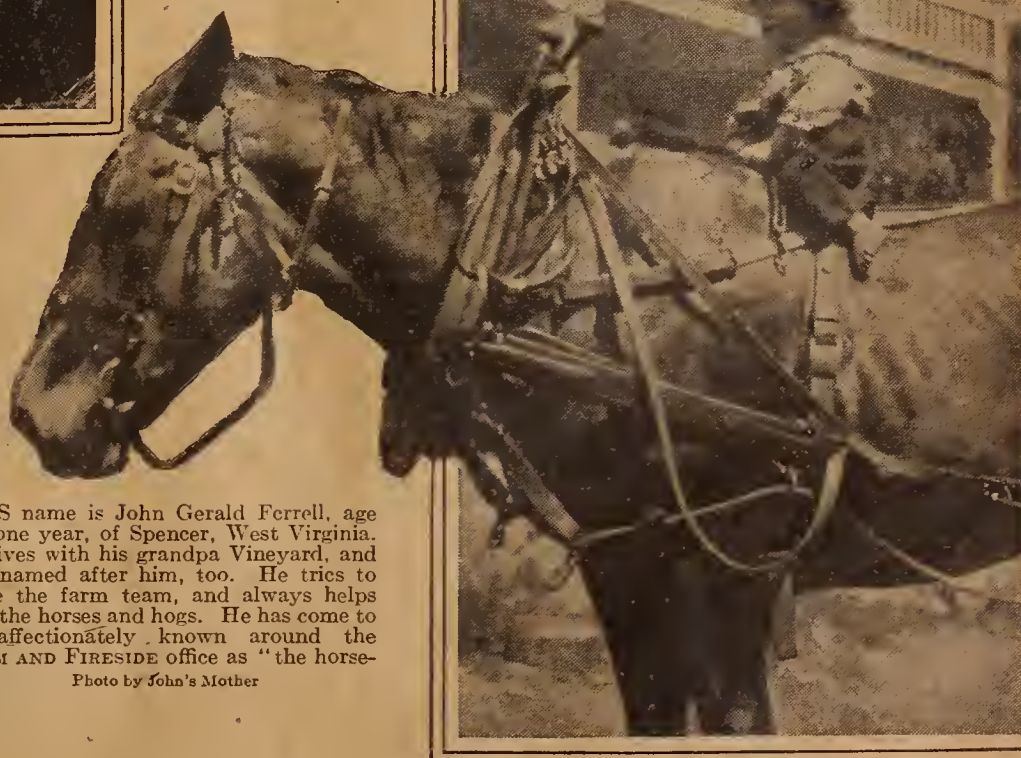


THE pumpkin with the sunbonnet on is little Miss Evelyn Travis, daughter of Mr. and Mrs. F. M. Travis, farmers near Marlboro, New Hampshire. She is nine months old, and her daddy makes lots of maple syrup and sugar, and Evelyn's mother says she is "a famous eater of it."

Photo by Evelyn's Mother

THESE are the Goodykoonze boys, near Fairmount, Indiana. They "farm" with a couple of Father's registered Jersey heifers with the pig as a passenger. The party had trouble the day this picture was taken, the team ran away, overturned the wagon, dumped out the pig on his snout, and mixed up boys, wagon, harness, and team quite considerably. Wouldn't think it to look at them, would you? But, then, you know how calves are.

Photo by Mrs. W. C. Smith



HIS name is John Gerald Ferrell, age one year, of Spencer, West Virginia. He lives with his grandpa Vineyard, and was named after him, too. He tries to drive the farm team, and always helps feed the horses and hogs. He has come to be affectionately known around the FARM AND FIRESIDE office as "the horse-fly."

Photo by John's Mother

That Good-for-Nothing Grant Family—And What Happened to It

By the County Agent Who Helped It Do It

TO-DAY I have been checking up my work as county agent for the last year, taking stock as it were, setting down in a big government blank a resumé of what I have done—my annual report.

What a colorless, lifeless thing it is! Can these figures carry to my superiors anything of the real things we have undertaken here? They cannot. Encouragement, cheer, neighborliness, new hope, courage—these things are meaningless to the statistician.

And yet, these are the things for which the whole project really exists. Therefore I am strongly tempted to go outside the record and tell you good FARM AND FIRESIDE folks one of the true stories of things that have happened in my county in the last year. I want to tell it to you, so that, if your faith in the county agent is not so strong as it might be, you may think it over and possibly change your mind.

It is one of those human interest stories every agent can tell—but never does. We don't circulate these stories much.

The story began, so far as I have a part in it, one day in April when fair weather overhead tempted me to venture far from town on an unfamiliar road. The warm sun and wind had drawn the frost from the ground, and rendered the road a slippery, sloppy track of slush and mud. After splashing and skidding over several miles of it, I finally ended in a mudhole with all wheels set in the mire.

Seeking the shortest route to possible assistance, I followed the first track which branched from the main road. It was little more than a trail, leading into some ragged, untended timber, and I suspected it to be some river farmer's thoroughfare connecting the farm with the public highway.

The surmise was correct. I soon came into a clearing where I found a "home lot." It was all that the falling timber, the broken fences, and rough, unworked road had prepared me for.

There was an unpainted house, with a sagging porch across the front, and at the rear door a clutter of dirty pails and boxes. A few faded garments flapped their ragged edges on a line stretched from the house to a tree. Not far distant—not nearly far enough distant—a sway-backed barn squatted disconsolately into a clay bank, with broken windows and hingeless doors gaping in perpetual, wordless dismay at the huge heap of stable litter which had been dehoused in the general direction of the river, where it lay wasting its fertility and offending the senses with its stench. Stacks, buildings, and fences, everything about the place, had the appearance of having given up the struggle.

WHEN the half-hearted yelping of a mongrel pup announced my coming, the master spirit of all this dejection and disorder appeared at the barn door, and came shambling toward me—himself the most miserable figure of all, with his slumping shoulders and unanimated face.

I explained to him the nature of my predicament, and asked for assistance.

"Yes, I reckon we can haul you out. But you will have to wait till the boy brings up the horses. He is in the pasture for them now. He'll be along pretty soon, I guess." And then: "Might as well set down," and he indicated a box near the chopping log.

"So you are that county agent we have been hearing about, be you?" and he looked me over with indolent curiosity. I said I was.

"Well, I guess its all right, too, for them that has a chance to farm right."

"But not for everybody?" I asked.

"No. Them that has, gets. But us fellers who ever had no start can't get nothin' out of it. It's for the big farmers."

"You have had some bad years through here, then?"

"Most always do. This land's no good. Got only eight hushels of wheat off'n this place last year. Larson over there got twenty."

"What kind of ground was your wheat planted on—what had grown there 'he year before?" I asked.

"Wheat."

Larson, I knew, rotated his crops systematically. Eight hushels of wheat—and a thousand loads of manure rolling down to the river!

We spoke of other phases of country life, and in all his comments I found proof of that blundering, soul-destroying inefficiency which can never learn to envision an operation in its entirety, but potters about with each little detail, seeing no connection between it and the whole undertaking. He was the type of man who frequently makes a good hireling but never a master, even of himself. It was not that he was ignorant, nor unacquainted with the theories of successful farming. He had read rather widely in farm papers and books, but he was always so behind and so

monosyllables, but his eyes showed the dog's appreciation of attention—not a look of understanding in the stranger, but simply a joy in being noticed. I never saw a more pathetic look on a hoy's face. I like dogs almost as well as I do boys, but I don't want to see them too much alike.

I wanted tremendously to do something to put some spark of boyishness and mischief into the docile brown eyes. I was turning over in my mind all manner of possible and impossible personal favors, forgetting everything else, until a question from the man brought me back to a realization of my responsibilities—and gave me the solution to my problem. As county agent I had it in my power to do something for the lad.



Charles just stood and stared, his eyes growing rounder and rounder, a slow grin parting his lips—first honors and a twenty-dollar prize: the Grant's luck had changed

befuddled with the accumulation of postponed tasks that he never found time to begin a program of improvement for himself.

While we talked, his wife came from the house and passed us going to and from the well with a pail. She was neat but faded and colorless, with a furrow between her eyes. Some little things I noticed—a bit of color fancifully applied at the neck of her faded dress, something that looked to me like handwork draped in a window of the house, and certain lines about her eyes made me feel that there were times yet when she felt a desire to express some appreciation of beauty and order in her lowly life. For the most part her hearing was that of resignation and acceptance of things as they are.

It is a tragedy what farm life can, and often does, do to a woman who doesn't get the upper hand of it.

Then the boy appeared. His grimy overalls, ragged cap, and unkempt hair were quite to be expected. His hands hung far out of his tight sleeves, and the wrists were red and chapped. He came and stood beside us without speaking, and followed us when we went to the barn for the horses. I glanced back carelessly when I heard his step behind us, and chanced to look directly into his eyes for just an instant, before he dropped them to the ground. I was shocked, for the expression in them was exactly that of a collie dog which waits with anxious look for a kind word. I checked an impulse to reach out and touch him as I would pat a dog.

I had listened with sympathy to the man's complaints, but the boy's patient, wordless protest against the cheerlessness of life reached my heart.

So I questioned him, with those foolish questions with which we grown-ups attempt to break through the ice of a child's reserve. He answered me gravely, in

"What part of the farm work do you like best?" I asked him as he walked along the muddy lane, just behind me.

"Aw, I dunno."

"Do you have a garden of your own where you grow something for yourself?"

"Naw." Then, with a hint of animation in his voice he added: "One year I set out some cabbage plants Ma had left. I got seventy-five cents for 'em in the fall."

"Fine!" I responded. "Are you going to plant cabbages this year?"

"I dunno."

"How would you like to plant corn?"

HE ONLY eyed me questioningly, as I fell back a step to walk beside him.

"I'd like the best kind to enroll you as one of the contestants in the Boys' Acre-Yield Corn Contest," I explained. I then gave him all the details of the corn contest, and ended by asking again if he would enter.

"Guess not," he replied, and then, "Anyway, I don't know if I can."

I was sufficiently encouraged, and turned to his father. He did not believe there was anything in it, he had no seed corn, and he couldn't see how they could find time to care for a little "dab" of corn anyway. I overcame his objections, however, and when at last my car was out of the mud, and panting smokily to be on the way again, I had his promise that he would aid and encourage his son in the project, and I had enrolled Charles Hartman Grant as a member of the Corn Club and a contestant in Acre-Yield Contest. Thus began my work with the Grants.

My second visit to the farm was on the occasion of my delivery to the hoy of his peck of seed corn, which was purchased by the Farm Bureau and furnished contestants free of charge.

His father stood by as I explained to the

boy how he was to proceed with his plantings.

"Don't you think that is the best way?" I appealed to the man on one or two points so I might not seem to ignore him.

"Sure. I always believed in doing that way," he was quick to agree with me.

There are many people like that. They can talk about what they do so much better than they can do it.

Before I left them, Mr. Grant said that he had thought some of planting a few acres of that white corn, and if I had some more seed he would like to get a hushel or so. He did not have the money just then, but he was figuring to sell a pig soon and—

He got his seed. I was glad to see that, and when I insisted that they get some of the wasting manure on the boy's plot he found time to spread a few loads on his own field. So, instead of one plot at the Grant's, there were two cornfields in which I took an especial interest.

SO IT went on through the summer season. Each time I stopped to take a look at Charles' corn I saw new evidences that Charles' father was trying to set his hoy an example in corn-growing. I kept in touch with the boys of the contest by means of frequent letters in which I gave general directions for the care of their corn. I often wrote, "I hope you will be through with your first hoeing by the tenth," or "Be sure to break the crust on the ground since the hard rain of last week," and I always observed that, however much his other work was neglected, Mr. Grant always took pains to act upon these suggestions at least one day before the hoy could get into his field.

It had its funny side—this determination of the "unlucky" farmer to preclude the appearance of being led by his son, but it appealed to me as being inexpressibly touching to watch the shrunken, colorless ne'er-do-well striving so childishly to keep ahead of his hoy. There was no bitterness in it, and there was no spirit to show me that my assistance was superfluous, as I have encountered in a few cases—it was simply a last grasp at self-respect, by a man who had had ideals, but had given up trying to realize them.

Before the summer was past he had consulted me frankly on a number of problems, and I was able to influence him to adopt more thrifty methods of caring for his livestock, and was also instrumental in getting a good field of clover sown on a corner of unused land. He said he had always believed clover was a good feed for cows, but he had never planted it before.

I got on splendidly with Charles. His shyness wore off, and I found him an interesting and thoughtful hoy. His pride in his corn showed me plainly that he was one of those children who have never been allowed to feel the pride of possession. The farm duties had merely been chores which had to be done.

Charles had his discouragements. A hailstorm in early June injured his corn. Later in the summer it was threatened by drought, and the nights turned cool early in the fall, and made him fearful of frost. One time he wrote to me:

"My corn looks pretty good but I don't think it is going to amount to much."

I read between the lines, and knew that the hard-luck story had been rehearsed again, and the hoy was trying to prepare himself for the worst.

By the time the white ears were hanging, hard and well-dented, out of their frost-bleached husks, Charles and I were real chums. Mr. Grant sometimes forgot his hard luck, and talked about his corn and clover instead, and I found Mrs. Grant kind and motherly by nature, with an indulgent love for things that were bright and beautiful. One day in spring I carried to her a few packages of flower seeds and some roots that had been sent to me by an advertiser, and throughout the blooming season I was asked at each visit to inspect the brilliant bed of flowers that she coaxed from them.

She was very much interested in the work of the boys' and girls' clubs, and one day questioned me about the different projects. When I explained the bread-making work of [CONTINUED ON PAGE 42]

Machines You Can Use to Save Labor in This Harvest

THE tractor has proved its worth in the hay field in many ways. The steady gait at which it travels makes it valuable in pulling the wagon and loader, steadiness being necessary for best results and to prevent excessive wear on the mechanism of the loader.

A wagonload of hay with a loader attached and in operation is a considerable load for the average two-horse team. Last year we used two wagons, one being loaded while the other was being unloaded. The loading was done with the tractor, and the unloading with a hay hoist driven by a small kerosene engine. The horses were used on the lighter tasks of pulling the mowing machine and side-delivery rake. The tractor was driven by one man, while the loading was done by another, the two changing places for relief. One man did the unloading as the hoist pulled the fork back. Some men arrange the tractor controls so that it may be driven from the load like a team of horses. Of course, some tractors are more easily adapted for this than others.

The tractor did not work out as well for pulling the mowing machine as it did for the heavier job. No doubt, with proper hitch and two mowing machines it would have been more profitable. The greatest difficulty in the way was that two men were necessary where the hay was tangled or down, which is frequently the case where the hay grows more than two tons to the acre. Some tractors are well adapted to this job, however, being arranged to drive from the mowing-machine seat.

F. W. IVES.

In the Alfalfa Field

BECAUSE the hired man has gone with the buffalo and the wild pigeon, the farmer of to-day must investigate every means for better economy of labor in his harvesting methods.

The gathering of alfalfa, because of the number of cuttings per season, offers a fertile field for the saving of labor. Where one has several acres of alfalfa, it is good practice to cut with a six-foot mower. It is not necessary to delay cutting until the dew has dried off, as this cuts into the day's work, for the time before entering the field is usually lost. Cut enough each morning to provide work for the following day.

When the grass has reached the point where the "twist" test shows it is sufficiently dry, it should be raked. A side-delivery rake that has a raking width of two swaths is best. Be sure to turn over the entire two swaths, or else there will be damp hay under the windrow. The side-delivery rake gives a small loose windrow, allowing free air circulation. In good drying weather the raking can be done late in the afternoon of the day the grass is cut.

After lying in the windrow until the next afternoon, the hay should be loaded. A loader will save labor, and it should be delivered at once to the barn or stack. All of the above work can be done by one man, with the help of one boy to drive the team, if an efficient loader is used.

If the barn has an open floor and plenty of ventilation, and the stack is built on rails that permit air circulation, the hay resulting will be very sweet, and no leaves will be lost during the process of curing.

J. B. GREEN.

A New Fruit Grader

GRADING peaches in large quantities will be made easier this year where growers use the new sizing and grading machine invented by government workers, and successfully tested at Leesburg, Virginia, and Mayfield, Georgia, last year.

The machine is somewhat the same as commercial types now in use, but has a number of new improvements that increase its efficiency. Its dimensions are 24 by 15 feet. It can be operated by an electric motor or small gas engine of less than one-horsepower capacity, and it is possible to grade from two to three carloads of peaches a day with each machine. Its possibilities are not limited to peaches, however, for it will work with other fruits. Government officials estimate the ma-



Here are little John and Howard Roberts on the beach at Barnegat, New Jersey, playing the age-old game of "listening to the sea shell." The picture was taken by their father, H. Armstrong Roberts of Philadelphia. Barnegat is a famous spot on the Jersey coast, having been used as the setting for more than one well-known novel, among which is "The Tides of Barnegat," by F. Hopkinson Smith.

chine can be made at a price of \$450 or under. Drawings of the device can be obtained from the Bureau of Markets, U. S. Department of Agriculture.

Wool Profiteers Fined

MORE than \$1,000,000 in excess profits is to be collected from wool dealers and returned to the growers as a result of a recent hearing in Washington, called by the Secretary of Agriculture, on matters relative to the valuation and handling of the 1918 wool clip.

The primary cause of the hearing was the numerous protests of Texas wool growers who claimed that too great deductions for dirt and impurities had been made in valuing Texas wool. Before the hearing ended, however, it included growers on both sides of the Mississippi River. It will not be necessary for individual growers to file claims for refunds, it was decided.

Power Harvesting Pays

IF YOU own a tractor, do not hesitate to use it to draw your grain binder, thus relieving your horses of one of the hardest tasks of the summer season. In attaching the binder to a tractor it is usually better to attach the stub tongue considerably off center, setting the tractor away from the grain. This allows more room at the corners for square turning, and with a quick-turn fore truck an absolutely square turn can be made without stopping the forward motion of the tractor or leaving uncut grain. Nearly all modern tractors have extension steering and throttle control attachments that permit the operator to ride on the binder seat and drive both tractor and machine.

The greater speed obtained by use of the tractor, however, coupled with the saving of horseflesh, justifies the use of an operator on both binder and tractor.

J. B. GREEN, Ohio State University.

Prize Contest Announcement

How I Got Started With Purebreds

WE WILL pay \$10 for the best letter telling how you got started raising purebred livestock, and why you think it pays to raise them. For the next best letters we will pay \$5, \$4, \$3, \$2, and \$1 each for all others that are accepted.

If you are a breeder of purebred cattle, horses, sheep, hogs, or poultry you are eligible to enter this contest. Keep your letter short. We like them to be 500 words or less. Good, clear photographs of yourself and animals will add to the value of your story. Tell how you started with purebred stock, and be sure to give details as to whether they have paid or not. Any comparisons between profits in raising purebred and grade or scrub stock that you can give will be valuable.

This contest closes July 31st. Enclose a stamped envelope if you want your letter back. Address Contest Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

What an Irrigation System Did for My Garden

A COUPLE of years ago, when we bought our electric lighting and pumping outfit, the man who sold it to us mentioned among other things that it would irrigate our vegetable garden. However, I put this down as a talking point which would "listen well on paper," but wouldn't amount to much in actual practice.

But after we installed our pumping plant I got a letter from the irrigation company explaining how I could put in a couple of lines of pipe over my vegetable garden at a very moderate expense that would supply all the water I wanted, at any time, by merely turning a valve, and so I decided to try it.

I must say, after using for two years this mechanical watering system, that the claims which were made for it were not exaggerated. The results we have been able to get have been simply marvelous. For a great many years we have prided ourselves as having as good a garden as is grown in the section, but it is no exaggeration to say that our vegetable crops average at least twice what they did before. Furthermore, we can plant at any time without waiting for rain, and get immediate germination, and keep every crop growing right straight through without any check until the day it is harvested. Thus we are able to get in a good many more crops each year than if we trusted to the weather man for our rain supply.

Counting both the increase in the crops and the gain in the number of crops, we get at least 300 per cent more from our garden space than we used to, and the quality of the stuff measures up better too.

WE PUT in two lines of irrigation pipe, each 200 feet long. These lines came complete, made up with a special irrigating nozzle every three feet, and a special union on the end of each fitted with a strainer to keep any sediment from getting into the line and clogging up the nozzles. They also have short handles, making it possible to turn the line from one side to the other. Through the little nozzles inserted in the pipe the water is thrown in tiny streams to a distance of 25 feet. These little streams break up in the air so that the water falls to the ground in tiny drops like a fine gentle rain which will not pack the soil or beat down even the smallest plant. As we run our rows in the same direction as the lines of pipe, we can water a narrow strip the entire length of the garden any time we want to. This is especially handy when we are setting out plants, just after sowing seed in dry weather, or just after hoeing or cultivating any crop as soon as the weeds have had a chance to die in the sun.

All we had to do to put this system in was to run an inch pipe from the barn to the garden, a distance of about 300 feet, and put in two rows of cedar posts 50 feet apart to support the irrigation line. The feed line from the barn to the garden was only a foot or so under the ground, as we turn the water off and drain it out before cold weather.

While we grow our vegetables primarily for our own use, we have always sold a few, and since having the irrigation we have had such a big surplus that we have sold quite a lot, especially during midsummer, when all the rest of the gardens around here are more or less dried up. The summer folks from a good many miles around come to us because they know that they can get nice, fresh, crisp things. Our "rain machine" is something of a curiosity, and they like to stop and see how it works. Altogether, I suppose, we have sold enough vegetables to pay for our two lines of irrigation two or three times over in the two years since we have had them, in addition to having more and better vegetables for ourselves.

F. F. ROCKWELL.

Why does the woodsman always break in two a match after use? Because the habit prompts the thought "Be careful!" It requires handling the hot end, and if the match is not extinguished the half which burns on the ground is not likely to generate enough heat to start a brush or forest fire.—N. Y. Agrigraphs.

When You Make Your Farm Look Better You Make It Worth More

By Franz A. Aust

Landscape Designer, University of Wisconsin

PRESTO change!" the magician used to say, and beautiful ribbons unwound from old silk hats, gold cages and bright birds appeared, and pots of budding flowers sprang from nowhere.

"Presto change!" says the farmer's family, and the results are just as magical, although they take a good deal more elbow grease and a much, much longer time. But the farmstead that has been a house and barns and fences, with beautiful fields that shame the rest of the picture, is worth the time and effort of transforming into a farmstead where well-planned home grounds are the center of things.

To time and effort should be added—not money (that is of the least importance), but *thought*. Every farmstead has a slightly different plan, and no two families agree on what or how they want to spend their efforts. What they are agreed on is making the farm a pleasanter place for living.

There is an awakening interest in the beautifying of the farm grounds. Trees, shrubs, and flowers planted appropriately about the farmstead not only add to the cash value of the farm, but also give comfort and beauty to those who live there.

We have also begun to realize that dollars are not the sole object in life, that no one can afford to have bare and ugly surroundings. We are beginning to think in terms of "Home First," and that includes home grounds. Beautiful home grounds do not require a fortune or increased incomes, but, rather, careful study in the arrangement of the necessary objects, such as house, roads, walks, and outbuildings, and of the planting materials, such as grass, trees, shrubs, and flowering perennials. The person of sufficient wealth may obtain the services of a landscape designer, with the possibility of a greater degree of immediate success; but it is the average farmer not able to pay for such services who will eventually better the general appearance of the farm homes. What he wants to know is how it can best be done.

The first thing to do in making the plan for beautifying the home grounds is to study the arrangement of the necessary objects and the planting materials as you would study a picture. Consider each tree, shrub, or flower, its habits of growth, the size to which it will grow, and its location, before giving it a place in the home-grounds picture.

EVERY farm place has its own individuality, just as every person has. On one farm the backbone of a plan for beautifying the home may be two or three old trees. This was true of the farm shown in the first picture. It was a little trouble to leave the trees standing, perhaps, but there was a foundation for a beautiful home place, already at hand. Possibilities such as these are worth hundreds of dollars to the new home site. Compare with it the staring, dreary loneliness of the farm from which all the timber has been cut, leaving the house bleak and ugly. Another one may have an especially beautiful view of lake, hill, or river; then the farmstead can be so planned that this view is emphasized.

The house is the central feature of the farmstead picture. Give it the prominence it requires, and make all other features secondary to it. Locate the house well back from the road. Place it so that it will be free from odors of farm buildings. Never dwarf its size by placing larger buildings nearer the road. Walks and drives, necessary lines of travel to the house, and outbuildings are seldom objects of beauty, so make them as inconspicuous as possible. Place them at the sides of the lawns so they will not divide what would otherwise be one unbroken sweep of grass.

The entrance drive gives hospitality to the farmstead picture. It should lead with pleasing curve and easy grade to the

house and farm buildings. It should be inconspicuous. It is well to provide a space in which to turn around, as indicated on the plan of the Rusk Farm.

On small areas, walks should be straight unless there be a good reason for making them curved. On larger areas curved walks and drives, if reasonably direct, are more pleasing. Remember, when you put in walks and drives, that too many walks spoil the plan. They cut up the lawn, make it harder to mow, and use good money that might have been spent in making the place beautiful rather than cluttered. If possible, make each walk serve

with the other features of the landscape. The farmer of the Middle West and many of the Eastern States will find the list of plants given suggestive of the possibilities of native hardy shrubs and trees for his lawn.

Trees furnish the frame and background for the home-grounds picture. Plant permanent long-lived trees. Place them at the sides of the house and lawn to frame the views, and to screen unsightly objects. Plant them at the rear of the house to give a background against which the house may be seen. Plant them along the roadside for shade and comfort for the passer-by. Plant a shelter belt of trees to the west and north of your buildings, for protection from cold winter winds. Plant trees which will be useful on the farm in future years when lumber is scarce. Such small trees as the redbud, hawthorn or thorn apple, flowering crabapple, and plum, used in groups of two or three in connection with shrubs, are

and the wider portions of the border beds. Plant low-growing shrubs in front of the higher ones, so there will be one continuous mass of foliage. Do not scatter a great variety of plants in one bed, but use several of one or two varieties to secure unity and a massed effect. Avoid planting shrubs in straight lines.

Vines give individuality to the home-grounds picture. Plant them near the porch for shade and beauty. They may be used to cover walks, outhouses, and fences. Use them to conceal architectural defects, or to screen the clothes yard from the public view. A list of the trees, shrubs, and vines that are almost universally suited to the climatic conditions of the Middle West will be mailed to you if you will send your request with a stamped envelope to the Farm Home Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Perennial flowers give variety and color to the home grounds. Plant them against the shrubbery borders, not in the center of the lawn. Plant some of the native wild flowers which bloom in late summer and autumn. This is one means of preserving the native flowers of the woods and fields so that future generations may know them. Wild asters, goldenrod, boneset, violets, wild phlox, and many of the ferns are fairly easy to transplant, and likely to thrive if given a good garden soil and congenial conditions.

Annual flowers are especially useful in the home-grounds picture to fill in the "growing years" of the permanent plantings. To make the most of the annual flowers, at the least expenditure of time and effort, they should be planted according to some definite scheme. For instance, a border of yellow, gold, and white may be used on either side of the front steps; or blue, white, and pink may be chosen. A mixed border, carefully selected, using the scarlet runner bean as a background, with larkspurs next, then petunias, and then alyssum, is worth trying. Cosmos, gaillardia or blanket flower, calliopsis, and sweet alyssum make a yellow border that will be in bloom all summer. By using larkspur instead of gaillardia, and verbenas instead of calliopsis, a different color effect is obtained.

On new farms, where there has not been time to plant the farmstead as it is to be, flowers do more to make the first rough house a home than any other one thing. A definite well-chosen color scheme may be chosen, as for the bungalow pictured. However, because of the rust which often affects the hollyhocks, other flowers are usually more desirable. Another scheme for the cottage might be a background of dwarf cosmos, together with a few hollyhocks in front of them, groups of annual and perennial larkspur and balloon flowers for accent, perennial coreopsis as the center of the border, and the borders edged with sweet alyssum.

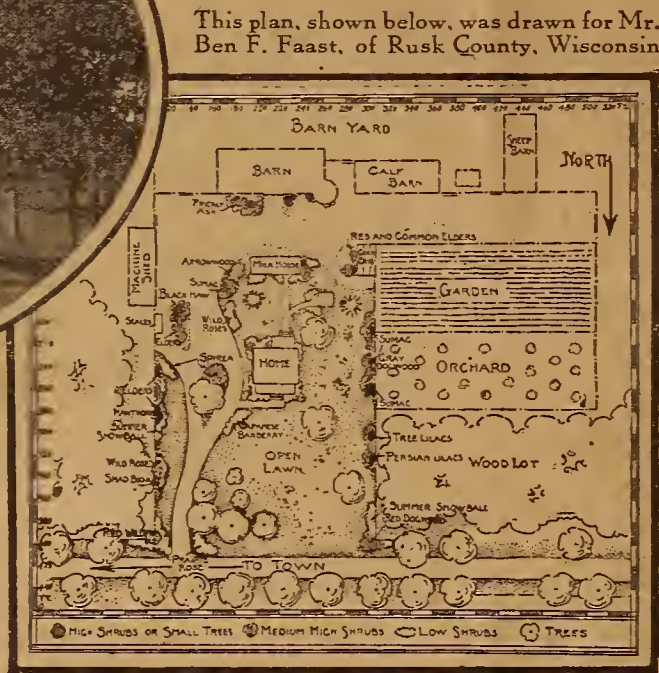
For the beginner, it is better to plant perennial flowers in masses, using only two or three kinds, being careful that the colors will harmonize. The following combinations, where the colors are in different flowers, are usually extremely bad: Orange and purple, bright red and violet, scarlet and violet. Good results are usually obtained when any of the following two colors are used together: Scarlet and blue, orange and violet, orange and blue, yellow and purple, orange-yellow and purple. White flowers may be used to separate clashing colors. Plant the taller perennials at the back and the lower ones in front.

While it is possible to plant a farmstead wholly with native flowers, shrubs, and trees obtained [CONTINUED ON PAGE 42]



A Plan Drawn on Paper and—
the Result

The arrangement of the lawn, the placing of the drives, the whole plan of buildings and plantings is almost ideal. A few shrubs around a barn with house add a great deal to their appearance



more than one purpose. That means that the features of the grounds must themselves be well placed with respect to each other. The barn and other outbuildings, when framed with trees and partly screened with shrubs, may often be made interesting features of the home-grounds picture.

Garden and orchard should be located conveniently, but not so that they detract from the farmstead picture. The home orchard may be placed between the barnyard and highway, where it will frame the farm buildings and screen the unattractive barnyard.

The clothes yard is never an object of beauty. It should be completely screened either by lattice or shrubbery from the road or walk. It may often be made a children's playground, with the exception of one day in the week, if a movable clothes reel is used.


The lawn is the foreground of the home-grounds picture. Have it large enough to give privacy and expanse. There is, sensibly enough, a reaction against the old custom of building the farmhouse away from the road, so that no sound or sight of any world, except her own farm world, ever reached the busy housewife. On the other hand, the farmhouse is best placed far enough from the road to escape the dust and noise which automobile travel has introduced into rural life. If it is not so fortunately placed, proper planting and arrangement of the lawn can do a great deal toward avoiding a crowded, town-like look. On the farm the picture of the home grounds should be dignified and restful.

Keep the lawn free from flower beds, iron monuments, curious stones, or improperly located plants which would destroy the picture. Plant native shrubs which will attract the birds to the home grounds, and plant hardy shrubs which will harmonize

valuable for screening, for stepping down from larger trees and shrubs, and for giving variety to the shrub border. A study of the size and character of the native trees given in the list will help in selecting and placing them.

FREQUENTLY it is possible to collect trees from the woods. When this is done, better results are to be obtained by collecting small specimens which will transplant more readily because of the comparatively smaller root loss. Nursery-grown trees are transplanted frequently in the nursery row, and as a result a thick growth of small feeding roots close to the trunk is stimulated. Trees growing naturally lack such close feeding roots, because the growth has been allowed to spread out at will. Because of this difference in root growth, nursery-grown stock transplants better than collected stock, and it is often better to purchase nursery stock than to spend time and take chances in collecting. Much the same thing may be said of collecting shrubs, though they transplant with a smaller percentage of loss than do trees. Collected shrubs are frequently "leggy," sparse, and of poor shape, while good nursery stock is bushy and compact.

Shrubs are the harmonizing elements in the home-grounds picture. Group them at the corners and angles of the house to make it appear a part of the grounds. Plant masses of shrubs along the boundaries to give interest and year-around beauty. Use them to screen unsightly objects, and to make walks and drives less prominent. Plant the more refined-growing varieties about the house, and the coarser ones, such as sumacs, elders, and blackhaws, at the borders where they will be seen at a greater distance. Plant high-growing shrubs at the corners of the house



Taming a Jungle to the Needs of Men

FAR off in Sumatra, within a day's motor ride of the equator, this Company is now producing fine plantation rubber where once reigned a forbidding jungle.

Only one who has seen the marvels wrought there by our engineers, axmen, sawyers and planters, can picture truly the full immensity of this accomplishment.

Where lately bulked impenetrable forest, valuable rubber trees now flourish; modern workrooms, hospitals and homes stand where the tiger once had his lair.

In improving its supply of crude rubber with the growing yield from this plantation, Goodyear has succeeded literally in taming a jungle to the needs of men.

It is work of this constructive character, as applied both to raw materials and factory processes, that is steadily advancing the quality of Goodyear Cord Tires.

Nothing is withheld that foresight, enterprise or investment can supply, in the effort to insure a worthiness of product that shall protect our good name.

The results of such endeavor are seen today in the capacity of Goodyear Cord Tires to deliver a kind of performance unapproached in any earlier type of tire.

Because Goodyear Tires and the sincere conservation service behind them afford uncommon satisfaction, more people ride on Goodyear Tires than on any other kind.

This actual photograph, a glimpse of the 20,000-acre Goodyear estate in Sumatra, was taken while the jungle was being cleared from the land

Copyright 1920, by The Goodyear Tire & Rubber Co.

GOODYEAR

CORD TIRES

The Kind of a Farmer We Bankers Like to Loan Our Money To

By a Banker-Farmer

The same one who wrote "What's Wrong With the Country Banker?" last month

TWO farmers came in to-day to borrow money from my bank. One of them got it. The other didn't. One—we will call him Smith—owns a 200-acre farm without a penny of indebtedness. The other, who we will call Jones, is dairying on a 75-acre farm which is mortgaged for about half.

Did Smith get the money? No. We turned him down because he is so slow and unbusinesslike that we hate to deal with him. But we let Jones have \$1,000 on a long-term note, simply because he showed us how he was going to use the money to buy more purebred cattle, and because he has borrowed money from us before, and we know he will pay his interest when due, and the principal too, barring unusual bad luck.

I have seen this thing happen so many times in the thirty years I have been president of this country bank that I feel like pointing out some rules my fellow farmers may find useful in getting needed capital from the bank. So here are the seven points which I consider essential to successful farm financing:

1. Don't be afraid of borrowing money. Every successful business uses borrowed capital.

2. Learn to use your working capital intelligently. If you can save \$10 by borrowing money to pay cash, do it.

3. Be up-to-date in your farming methods. Anything that saves time, money, or effort is up-to-date.

4. Keep accounts; know costs, know profits.

5. Be prompt in meeting your obligations.

6. Remember credit is largely a matter of personal salesmanship, and that all credit is based on the character of the man seeking it.

7. Take your banker into your confidence. Tell him your plans and troubles. You will find him a human being just like yourself.

Don't think I am outlining an impossible program. I am not only a banker, but have also been a farmer all my life. I know from my own experience, and that of other farmers, that you can usually get the money you need from your local banker if you will put these seven points into practice.

Having lived all my life in a conservative farming community, I know just how many farmers abhor borrowing money. But money is a commodity, just like seeds or fertilizer. Successful men in every business are constantly using borrowed capital. If your credit is good for \$500 or \$10,000 and you aren't using it, you are losing a good chance to use money to make money. Do you think that great financiers like Morgan and Vanderbilt didn't need to borrow money? If you do you are badly mistaken. One of the greatest assets rich men have is that people have enough confidence in them to lend them the money with which to swing their huge enterprises. Morgan once said that a millionaire is not a man who has a million dollars, but a man who can raise a million dollars.

IF YOU can borrow money at six per cent and make it pay you eight or ten, you are using your credit to good advantage. One of the drawbacks to farming as a business is the slow rate of turnover. You are sometimes able to use your capital so as to turn it over twice a year. More often a crop or a livestock venture requires nine months or a year. The obvious solution is to take full advantage of your credit so as to grow more crops or feed more livestock.

One of the best ways to use your credit is to pay cash and get the cash discounts. It is sound business to pay six per cent interest at your bank and get the cash discount, which sometimes will be as high as five

per cent for thirty days, or at the rate of 60 per cent for the year. If you can save two per cent on a ten-day discount, you will save 72 per cent a year, minus what you pay for the loan.

These items may seem trifling, but in a year's time they count up. Furthermore, the firm you are dealing with will think you a better business man if you are a cash customer. It is to their advantage because it enables them to get a quicker turnover on their capital too. Farm auc-

Liabilities	
Notes to banks.....	\$5,500
Mortgage.....	2,000
Accounts payable.....	200
Surplus.....	9,600
Total.....	\$17,300

Any banker can tell at a glance that Johnson is worth between \$9,000 and \$10,000. He is using a good deal of borrowed money, but we know that when he sells his cattle this June he will be in good shape. We know, further, that Johnson

things. It will be to your interest to do so.

Credit is largely a matter of personal salesmanship. Other things being equal, the decently dressed, businesslike, confident farmer will win out every time over the other man. You are not asking a favor of a bank when you ask for a loan. It is purely a business transaction—a sale if you will call it that. You sell the banker your standing as a business man and your ability to use the loan to good advantage. The banker then sells you the money at an interest rate. That is his way of making a profit. He borrows his money at a lower rate from the big city banks, or uses his bank's capital and deposits.

It is very seldom that a bank fails to make money. Most of them are very profitable. Bank stock in some of the big New York City banks sells as high as \$1,000 a share. These big banks spend money on advertising and pay solicitors large salaries to get borrowers for them. So don't have any illusions about banks being charitable institutions. Whether you become one of their customers or not depends to a large extent on the way in which you approach them.

INTEREST rates, like everything else, fluctuate. At the present time they are high because there is a heavy demand for money. When you borrow money, remember that it is a commodity, and that because you got it for six per cent last year is no reason that you will be able to get it for that this year. You may and you may not, depending on the local supply and demand for money.

Most States have banking laws which fix a legal interest rate. These laws are principally to curb usurers and loan sharks, who prey on people in distress. Very rarely will a reliable bank charge you more than the current interest rate for money. Of course, you can always get a long-time loan on security such as a farm mortgage, for less than a short-term note without security. Interest rates in the big cities are always a little lower than they are in the small cities and towns. Very large corporations can always borrow money to much better advantage than can small companies or individual business men or farmers—just the same as you can buy fertilizer cheaper in car lots than by the sack. Big firms like the packers often borrow millions of dollars at a time. Look around a while before you pay what seems to you an exorbitant interest rate. There are some banks that are unscrupulous in their dealings, just as there are black sheep in any field of business. But you will find most banks are honorable and content to make a moderate profit.

By all means, have a bank account, even if you only carry \$10 there as a balance. If you do your business through a bank, your bank will learn to know your ability as a business man, and will be much more apt to loan you money when you need it. Take your banker into your confidence. You will find him a human being just like yourself. Tell him of your farming operations. Talk to him about business conditions, the markets, and your plans for the future. If you expect to go into purebreds next year, tell him now that you will probably have to borrow money then. If you are going to build a barn, ask his advice about how to finance its construction several months in advance, if possible. Don't wait until you start a thing and the bills come in. Be frank with your banker.

It is a good idea to borrow money now and then when you don't particularly need it. Every big business does this. It is called "establishing a line of credit." You will probably find some use for it, and you can pay it back [CONTINUED ON PAGE 28]



A leap-year party all his own

tion sales are a great place to lose money. You often pay higher prices there than you would pay at a private sale. If you do find a real bargain, have the cash ready and get the discount. Don't ever think a thing is cheap because you get it on time. That is the error many folks make. Usually you pay a pretty high interest rate for the accommodation.

Henry Johnson is a wiry little farmer who has just come here from Illinois. He owes money on his place, but he never has any trouble getting a loan, either from my bank or from the other bank. He doesn't always take the trouble to come in to see us. Sometimes he writes when he is busy with his crops. In either case he always sends in what business men call a financial statement. It isn't any trouble for him to do this, because he keeps a simple but complete system of accounts, and always knows where he stands. His statement will read something like this:

FINANCIAL CONDITION ELMWOOD FARM

Henry Johnson, Proprietor

May 1, 1920


Assets

Feed and supplies.....	\$2,500
Machinery.....	1,500
Horses.....	800
Livestock on feed.....	4,100
Farm and buildings.....	8,400
Total.....	\$17,300

has figured in depreciation on his machinery and buildings, so that he is probably worth more than his statement shows. His chattels would probably bring more at a forced sale than his figures show. You will probably get a better reception from your banker if you use Johnson's method.

Tell your bank what you want to do with the money. If you are buying sheep, show him how much money you made on them last year and what you can reasonably expect this year. If you want to buy fertilizer, feed, seeds, or spraying materials, be prepared to show him that these things are not a dead expense, but will pay a profit. It isn't the banker's business to know these things. It is your business to know and to be able to tell him.

NOTHING disturbs the machinery of a bank so much as having creditors who are slow pay. This is a common failing. No matter what you are worth, if you are a week late paying a loan you will not only disturb the routine of the bank, but you may also prevent someone else from getting the money. Every bank tries to have its available capital loaned out all the time. They figure on your loan being paid the day it is due, and on loaning it out again the same day. You also disturb their business schedule when you fail to pay interest when due. So if you want to have a clean record with your banker attend promptly to these

A black and white photograph of a man in a suit and tie, holding a large, curved Goodrich Silvertown Cord tire. The tire is arched across the middle of the image, with the words "GOODRICH SILVERTOWN CORD" embossed on its sidewall. The background is a dark, textured surface.

*America's First
Cord Tire*

Your Goodrich Dealer
offers you a *Silvertown
Cord Tire* with the
conscious pride that a
good merchant has in
a *good* product.

Goodrich Tires

Best in the Long Run

The B. F. Goodrich Rubber Company, Akron, Ohio • Adjustment Basis: Silvertown Cords, 8000 Miles, Fabric Tires, 6000 Miles

Grace Margaret Gould Says

Dresses are décolleté this summer, so necks must be beautiful



Sewing Suggestions

I WONDER if it has occurred to you that the style of finishing a garment changes just as much and as often as the cut. Last year, in a one-piece frock, we sewed the waist and skirt to the top of the inside belt, and this year we sew it to the center. And it is surprising, too, what a difference turning a seam the smart way makes!

Here are a few suggestions for finishing summer frocks of organdie or swiss, in a style such as No. FF-3911. Make French seams at shoulders, for French seams give the neatest finish in thin fabrics. Fig. 1 shows the first stitching, and Fig. 2 second stitching in French seaming.

Many of the summer cottons are made with collar and cuffs detachable, and it's a practical plan for laundering purposes. So, the neck of garment and lower edge of sleeves are finished with a bias facing, and edges of collar and cuffs are bound. Stitch facing as in Figs. 3 and 4, and binding as in Figs. 6 and 7.

Sleeves are easy to sew in nowadays, for sleeve and underarm seams match. Sew the sleeve to the armhole before the sleeve and underarm seams are closed. Stitch the sleeve to the armhole with a plain seam, as shown in Fig. 5, and bind armhole, but make French seams at underarm joining.

Grosgrain belting makes an excellent inside belt. Hem ends of belt as shown in Fig. 8, before joining to dress. Where waist is surplice style, as No. FF-3911, the best place for the belt and skirt to fasten is at the left underarm. The bottom of waist sews to center of stay belt, as shown in Fig. 11, except across left front. This edge is stayed, as shown in Figs. 9 and 10.

Try hemming the skirt as Fig. 12, before the top of the skirt is gathered.

A continuous facing is an easy way of finishing a placket. Fig. 13 shows facing stitched on right side of placket, Fig. 14 shows wrong side of placket, and Fig. 15 facing folded onto wrong side, and stitched.

The flattest finish at the waistline is the best. After skirt is stitched to stay belt, cover with a fold as Fig. 16.

To sew lace to scallops, stitch lace to right side of material as Fig. 17. Cut off seam as Fig. 18, and stitch as Fig. 19.

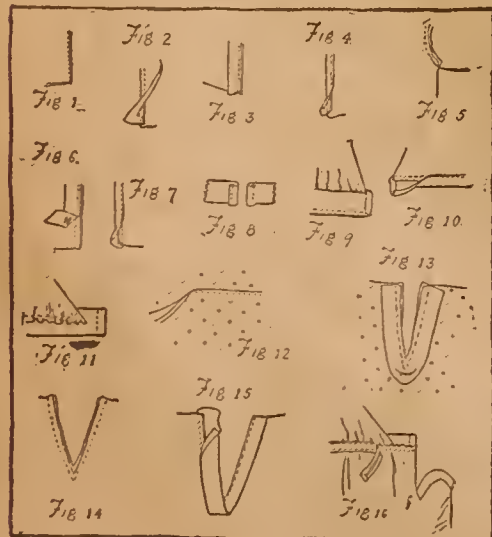
Pressed edges are much easier to stitch than those that are roughly turned. After joining a seam as in the case of stitching trimming to pocket (Fig. 20), press seam and press pocket. See Fig. 21.

To make a straight collar roll at the back of the neck, shirr it as shown in Fig. 23.

In joining the end of a fichu to a sash, lay in a fold. It will sit better. See Fig. 24.

A sash of a single thickness ties easier than a lined one. Finish the edges with a narrow hem as in Fig. 25.

If the space below, where a fichu crosses, is filled in with a crushed girdle of the dress fabric, it will do away with the danger of the fichu riding up and showing the joining of the waist and skirt. See Fig. 22.



No. FF-3911

The Pattern of the Month

JUST a simple summer frock of dotted swiss! But it proves how attractive a summer frock can be, for a fichu collar is about as becoming a style as has ever been devised, and swiss is certainly smart this season. You know it comes in all the pretty pastel shades just the same as the organdies. And it's made in navy blue too, with bewitching red dots or, for the conservative, with tan dots. Can't you picture the frock made in some such delectable shade of swiss as strawberry, orchid, or light green? Of course, the fichu would be crisp white organdie, edged with a dainty Valenciennes lace. It's a frock that is sure to become the young girl, and one which the older woman, too, might safely choose if she omits the pockets. Fichu styles also make up attractively in other fabrics besides swiss—for instance, organdie, batiste, or voile. Checked gingham might even be used for the style, and it would make up prettily too, if the trimming were white organdie edged with a narrow bias of checked gingham the same as the dress.

It's just another of Farm and Fireside's practical and smart patterns—No. FF-3911—Frock with Fichu and Sash. Sizes, 16 to 18 years and 36 to 42 bust. Width at lower edge of skirt in size 16, two yards. Pattern, thirty cents.

Send order to Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; or Pattern Department, Farm and Fireside, Springfield, Ohio.

Seen in New York



AFTER a stroll on the Avenue, one may forget some of the multitude of pretty things, but not the girdles. If you want to be fashionable, wear a girdle. That's what everybody in New York is doing. And isn't it an economical fashion? Add a yard of ribbon to last year's frock and, presto, you have a this year's style.

There are girdles that swathe the hips and dip at one side, girdles that go straight around, girdles that loop under, girdles that end in graceful drooping tassels, and sashes so akin to girdles that end in smart, upstanding loops at the center-back.

One cannot fail to note the bright splashes of color, here and there in the crowd, where Roman striped girdles add the summery touch to bolero jacket suits of blue tricotine. I have jotted down, too, just because it was so very smart, the description of a tricolette frock that I hap-

pened to catch a glimpse of in the lobby of a hotel. It was plain at the neck and short-sleeved, and I suspect that it was cut in chemise style—it followed such straight lines. But in place of the ordinary belt, there was a wide girdle that extended well above and below the waistline, and its particular feature was a knot and loop that hung at the left side. You will find it in the sketch above to the left of the Roman striped girdle.

I find girdles are apt to do one of two things: either they match the frock in color and fabric, or they offer a decided contrast, as in the case of the Roman striped girdle. This doesn't mean, however, that matching girdles are necessarily dull. I have seen even millinery raffia embroidery in bright colors on the girdle of a black taffeta frock, and, stranger still, shiny black cherries drooping from the girdle of a crisp white organdie frock.



Looking Your Best

FASHION still calls on you to reveal your neck. Therefore give a thought to its appearance. An ordinary washing once a day isn't good enough for it unless it's a real good neck—and, alas, how few real good necks are seen!

Take a peep at your own neck. If it's dingy and wrinkled, the chances are that you treat it like the bad stepsister of the face. But just a little kind care and attention will make it fresh and pretty. The constant daily use of a good lotion whitens the neck and banishes the telltale wrinkle. You can buy these lotions in the drug store, or you can make them right in your own kitchen.

Here's one used by a famous Spanish beauty: To the white of an egg add an equal quantity of strained lemon juice. Boil them to a soft jelly, and apply to the neck in an upward and outward motion. Of course you know that all motions in beautifying must be upward and outward, because as the years slip by the muscles sag inward and downward. Let this lotion stay on all night, and wash it off in the morning with cold water. The lemon juice acts as a bleach, while the egg is an astringent and irons out the wrinkles.

It's not only in your kitchen that you can find cosmetics for your neck. Step into your vegetable garden. The juice of those ripe tomatoes will beautify any neck. Or else pick a cucumber. Cut it in pieces, cover it with cold water, and slowly boil it down to a pulp. When this is strained and cooled you'll have a delightful lotion. It can be used on a refractory face too.

There are preparations to remove liver or moth patches from the neck. Peroxide or a paste of borax and water faithfully used for several nights may lighten them.

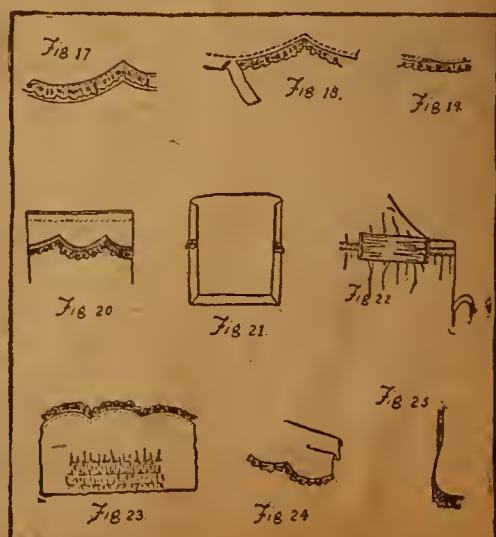
Just because you're thin, don't congratulate yourself that you will escape the double chin. It's a mean old thing that sneaks upon you unaware. A few good exercises practiced every day will soon send it about its business. Slowly but rhythmically toss your head backward and forward, and then from side to side. Then twist it, still slowly, as far around your body as you can.

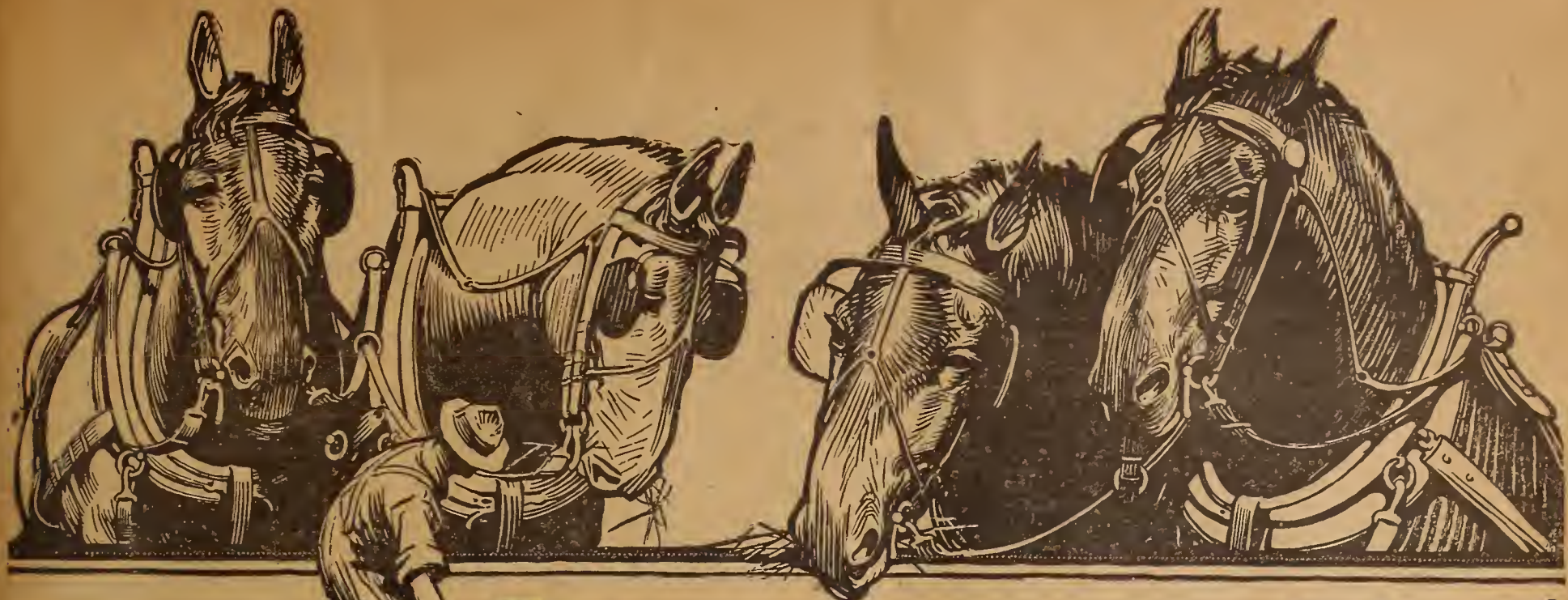
The too-thin neck and shoulders can be improved by massage with a heavy nourishing cream, and by deep breathing. Anything that aids in building up the general health will have a good effect upon the neck. You seldom see a woman of vigorous health with a scrawny neck—now, do you?

If you powder your face, put a little on your neck. Then the line where the powder ends won't show, and the skin will look pretty in a natural way. And, as I said before, a pretty neck goes far in aiding you to look your best.

For a neck that is darker than the face, or discolored by furs and high collars, there is a wonderful bleaching cream.

All inquiries answered.

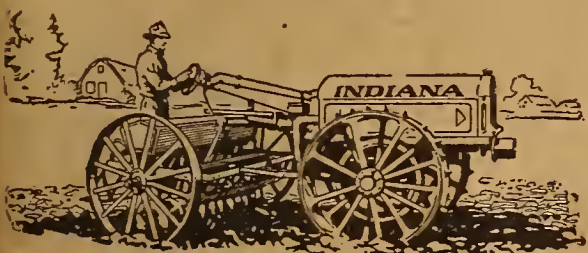




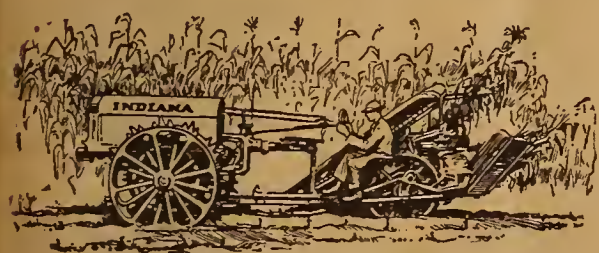
Are you working for your horses?



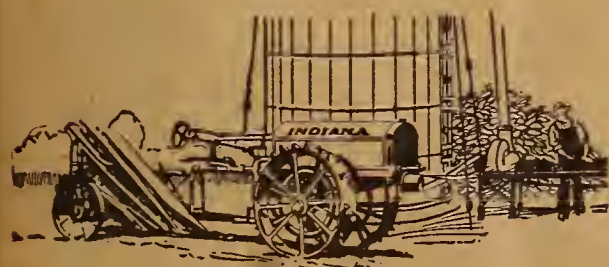
With Sulky Plow



With Grain Drill



With Corn Binder



Cutting Ensilage

WHEN you sell two teams and put the money into an Indiana Tractor you cut down the time you have to spend doing chores and raising feed for horses. You quit working a month or two a year for your horses and work all the time for yourself.

Horses in excess of one team for hauling and odd jobs can be used on most farms only 90 to 100 days during the crop season. But the high cost and trouble of keeping them runs on through the winter.

The Indiana Tractor will do the work of four horses and do everything that they do. Plowing is only 15 per cent of what a tractor must do to replace horses. The Indiana plows more than two teams, and is light enough to go on the ground any time horses should.

It attaches to all makes of harrows, discs, planters, one and two row cultivators, mowers, binders, corn binders, rollers, drills, cultipackers, potato diggers, and all orchard and vineyard tools.

The regular implements you already have are the only practical size and type for row cultivation. The Indiana Tractor will use them with inexpensive hitches. In many operations it will replace six or eight horses. The driver rides the implement and has his work in front of him. The Indiana is the all-round, single unit, one-man tractor.

H. P. Purviance of Logan County, Ills., say: "My Indiana Tractor certainly is a success with the grain binder or anything else one can do

with four horses. Used it on double tandem 7 ft. disc, also on double corrugated roller and Nisco manure spreader. I like it better to cut grain than horses, for heat and flies do not bother it and the power is more steady. It stays on top in low spots better than horses."

An Indiana will work every day and the money you can get for four horses and the cost of keeping them a year will more than pay for it. Some owners do not have a horse on their places.

Clayton McFarland, Tippecanoe County, Ind., says: "My corn is equal to any corn in the community and I cultivated it entirely with my tractor. I can plow 20 acres of corn a day with a two row cultivator. I can turn at the ends and break less corn than with a team. I harvested both wheat and oats myself with no trouble from the tractor."

Many owners report cutting grain of all kinds at a fuel and oil cost of 10 to 12 cents an acre.

You can get an Indiana promptly from any of our branches, get rid of four horses, and do two men's work yourself. In the last four years this tractor has made hundreds of enthusiastic farmer friends, who help us sell more Indianas.

For 20 years the Indiana Silo and Tractor Company has been known for high quality products and fair dealing. Ask any of the 75,000 owners of the Indiana Silo.

Mail coupon for book of pictures showing the Indiana doing all the work horses do, and book of letters from users. If you need a silo, we have one for you. We are the largest silo manufacturers in the world.

DEALERS: This tractor can be used more on more farms than any other. It's the biggest dealer proposition in the field.

THE INDIANA SILO & TRACTOR COMPANY

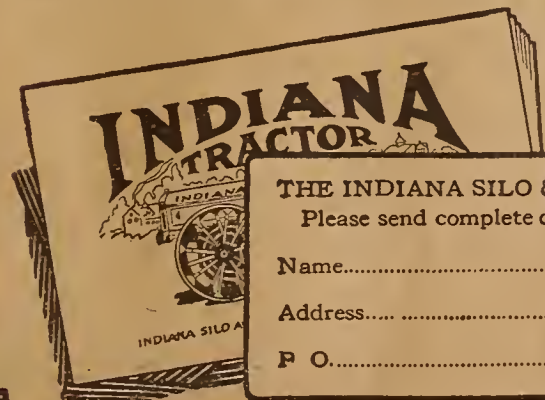
- 38 Union Building.....Anderson, Indiana
- 38 Indiana Building.....Des Moines, Iowa
- 38 Silo Building.....No. Kansas City, Mo.
- 38 Live Stock Exchange Building.....Indiana Silo Company of Texas, Fort Worth, Texas

INDIANA

ALL-ROUND

TRACTOR

"The World's Tractor"



THE INDIANA SILO & TRACTOR CO. 38

Please send complete descriptive matter on the Indiana Tractor, and letters from users.

Name.....

Address.....

P. O. State.....



The laborer is worthy of his hire

All service is worthy of its hire and good service cannot be continuously obtained unless adequately rewarded.

From the beginning of telephone history the American public has received the best telephone service of any country in the world. In proportion to the service rendered the people have paid less for this telephone service than any other country in the world.

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FARM AND FIRESIDE
SPRINGFIELD, OHIO

The Judge

[CONTINUED FROM PAGE 13]

As for Frank, he didn't seem to care, veteran that he was. His chief interest seemed to be that Stella should go home with a pocket full of birds. Time and again the three advanced on coveys, Stella in the middle; time and again she missed; but always out of the confusion ahead came Frank to her, a bird, killed by one or the other of the men, in his mouth—came straight to her, his eyes glowing with pride.

"I didn't kill him, old man," she laughed over and over. "Really, I didn't."

But each time he stood in front of her, bird hanging from his mouth, unmoved. His yeas were yea, his nays nay. She had to take the bird to get rid of him; even after she had done so he waited until she had dropped it in her pocket. Then, satisfied, he turned and galloped off.

And he won out too, won out over a rival who had taken championships. When at sunset the hunters turned home, the score stood, Frank five coveys, Gladstone three.

"Earle's dog has an unfair advantage," declared Burlingame; "he knows the country."

STELLA glanced at him quickly, her head tilted. He was frowning a bit at the dogs, still scouring the fields beside the road. She had been right—things must go this man's way.

"No alibis, Burlingame," said Cawthorn. "We've hunted with him before. The moldy old Frank was made in is broken."

"I thought I could hit them," said Stella ruefully. "The Arizona pheasants made a target like a barn door compared with quail."

"You don't need to hit 'em," assured Burlingame.

"I really think you got a few," consoled Cawthorn.

They were riding straight into the huge ball of the setting sun. Their talk ceased. Gradually the quite pensiveness of purple hills and cold, lengthened shadows fell over Stella's spirit. They passed a poor old house. A man chopped wood in a littered yard. A sallow woman on the tumble-down porch regarded them with narrow, disapproving eyes. A boy with a bundle of pine fagots had started to cross the road. Ragged and wistful he stared up at them. Cawthorn dropped behind.

"Like birds at the house?" Stella heard him ask.

"Yes, sir." The boy's voice was shrill like a girl's.

Stella turned, her gloved hand on her horse's rump. Cawthorn had leaned down from his saddle. He was passing the boy bird after bird. The man in the yard had stopped chopping. The expression on the sallow woman's face had changed from disapprobation to eagerness.

"Come on, Cawthorn!" called Burlingame. "Time for another covey if we'll hurry. Let's give Gladstone a show."

EVERY window was aglow when they reached home. The other guests had arrived that afternoon. It was long past midnight when Stella went up-stairs, flushed with the old-fashioned dances through which Burlingame had led her. It was he who had dominated the merriment. It was about him that women in their evening dresses had gathered. He had followed Stella to the foot of the stairs. He was beginning to make up for that lost time in Arizona, he said, his compelling eyes deep in hers.

The door to her room was ajar. Before her fire dozed Frank. She smiled down at him as he lay humbly proud before her and raised his eyes to her, his tail wagging self-consciously across the rug.

"That's all right, old man," she assured him. "This is your fire. I'll leave my door open. You come up here any time you want to, and stay till bedtime. Oh, I was proud of you this afternoon! What do you think of me—some shot, eh?"

She drew up a rocker beside him. He

had accepted her assurance; he knew no guile; the matter was settled—this was his fire.

"Old man," she asked, "which of those men do you like best? Dad says you know."

He rolled his eyes toward her, held them there a moment, then turned his gaze to the fire. The afternoon's hunt was going through his head.

"Oh, you make me feel lonely, Frank!"

He looked up at her apologetically. He tapped the rug with his tail. Then once more he studied that fire in whose coals he seemed to see endless hunting fields, endless triumphs. He was unapproachable to-night. Girls' affairs were girls' affairs. He was a mighty hunter!

FOR the old mansion, that was a week out of its picturesque past. Each sunlit morning it saw parties set out for a hunt or a stroll or a ride. Each evening it welcomed them back under its sheltering eaves with a grave, ripe, impartial courtesy, and listened indulgently to the laughter that echoed in its generous halls and rooms.

Burlingame stayed on from day to day, business could wait, even foreign loans; he transacted necessary details by telephone or telegraph, then dismissed business from his mind.

He was a fine horseman, and he and Stella rode all over the country in the crisp, clear winter air. Burlingame was full of keen observations of men and women, particularly of women; Stella's repartees were spiced with a charming unconventionality. Their laughter rang out as they galloped or loitered along, and Stella returned from the rides flushed and glowing.

Cawthorn was a walker; so was she. The hills and woodlands were traversed by winding dry paths, full of sunlit surprises. He said striking, solid things. He had done more than build railroads in impossible places. He had recorded the essential aspects and customs of these places. He narrated with bold strokes as he swung along. There was an expansiveness about him like the horizons of her own prairies, and a humor that laughed not at people but with them.

It was Burlingame who spoke first—before the week was out. He and Stella had ridden out together with their guns and only Burlingame's setter. The dog might have birds for all he knew. His mind, like his eyes, was concentrated on the girl's face.

She jerked her horse back, her cheeks flaming, and looked him level in the eyes. "I'll have to wait, Mr. Burlingame. A girl—I—must have time to think."

"It does not call for thought!" There was a flush of impatience on his face as if he were not used to being put off. "I have everything you need," he pleaded. "From the first time I saw you I wanted you."

"Really, I'll have to wait—to think—I don't know."

"Let me settle it for you, Stella!"

Again she drew her horse back.

"All right," he laughed confidently. "All the time you want."

She did not talk to Frank that night; she only patted his head as she put him out. Her mind was filled with pictures of a home on an exclusive Washington avenue. Burlingame's friends were people of distinction, and she saw herself the center of a brilliant society. Long after the rest of the house had grown quiet she lay awake, looking at the moonlight that fell across the floor, her life parading itself before her like a stately procession.

IT WAS several days later that Cawthorn came to her.

"Let's make it a ride this time," he said.

They galloped rather silently toward the roll of distant mountains. On top of a hill they drew up their horses, frankly facing one another. The words did not come easily to Cawthorn. In fact, there wasn't

[CONTINUED ON PAGE 38]



WINCHESTER

1866

1920



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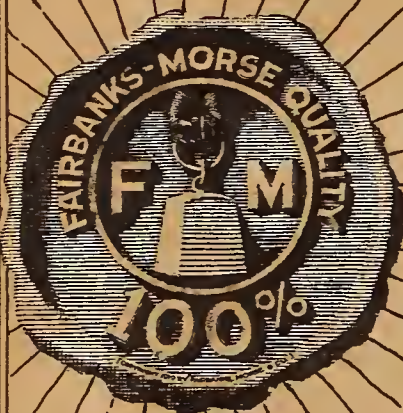
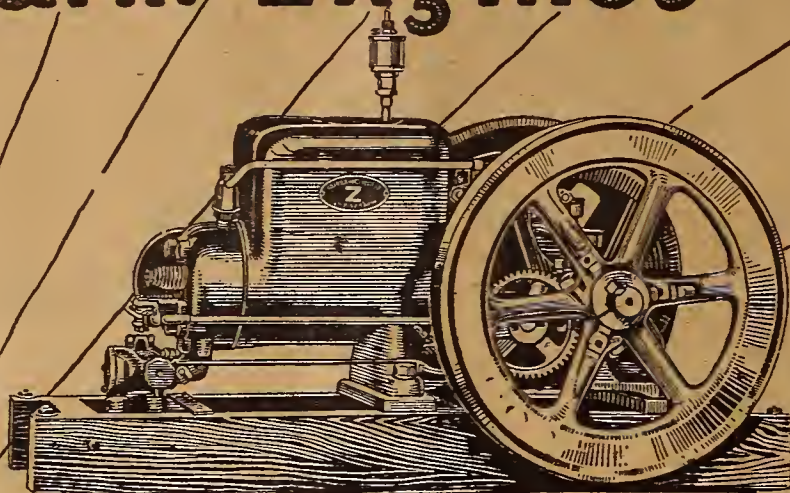
For grizzly and Alaskan brown bears, moose, and other large game of great vitality, as well as for long-range shooting at caribou, mountain sheep and goats, above timber, we recommend the Winchester Model 95, shown above. It is the most powerful American sporting rifle. Made in .30 Army, .303 British, .30 Government, .35 Winchester, and .405 Winchester calibers.

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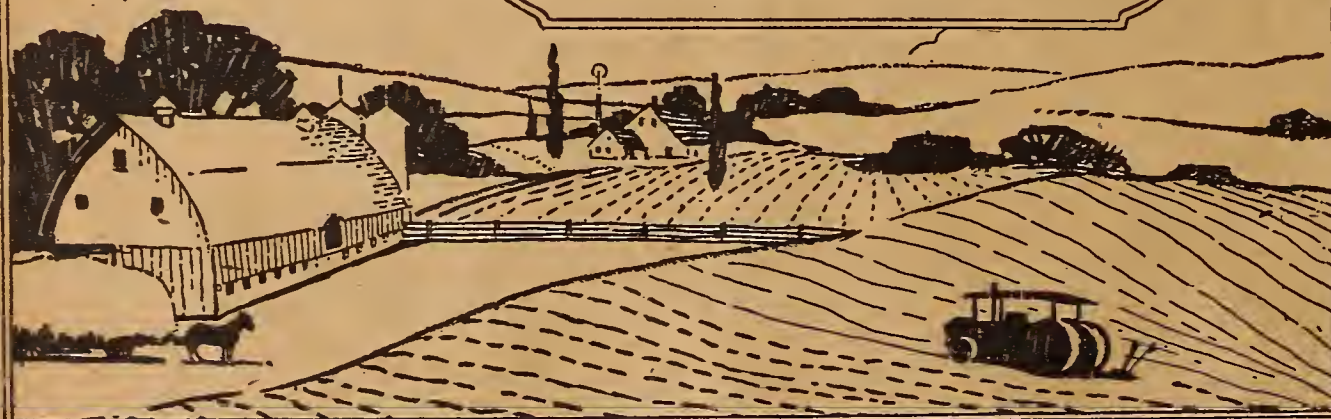
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(11)

The Kind of a Farmer We Bankers Like to Loan Our Money To

[CONTINUED FROM PAGE 22]

perhaps before it is due. It is always easier to get a second loan, provided you are prompt in paying back the first. You will then be a "regular customer," and they will count on helping you. A banker, like every other business man, has to take care of his regular customers before he accommodates outsiders. It is only fair and good business practice to do this.

I have seen many good farmers fail because they were poor business men. They didn't know how to make money work for them. I have known splendid farmers who slaved away all their lives because they thought it a disgrace to borrow money, even for much-needed improvements. I know many farm owners who always have difficulty borrowing money because they aren't prompt in paying it back. But there are a lot of prosperous, up-to-date farmers who deal with my bank who are paying good fat income taxes because they are good business men. They know costs; they know when to borrow money, and how to get it.

There are many things that enter into making a success of farming. My experience makes me believe, however, that there is nothing more important than knowing how to get sufficient working capital. It may be that you are handicapped by the lack of this very thing. If you are, I believe you will find it helpful to make a careful study of these seven points. And if anyone finds anything in this article that will help him, I will consider it very worth while.

Shall Farmers Operate the Farm Loan System?

[CONTINUED FROM PAGE 9]

that there are now billions of private farm loan bonds in this country amply testifies to the popularity of this form of bond, even when not issued under government supervision.

The tax-exemption clause on farm loan bonds through the system would be included in the amended act, while provision would also be made for the conversion of all loans now held by joint stock land banks over to the co-operative land bank system, the directors of these farmer banks making necessary payment to the private bankers for their security. This would serve to do away with the present private-banker menace which the 1916 Congress saddled on our farmers at the same time they gave the farmer his loan system, and would do away with the greatest menace the system has to contend with.

Officers of the farmers' local loan associations would be elected by the stockholders and directors, as now, and would have a real voice in the administration, rather than a small part in the chorus, as now.

If you believe farmers ought to operate the farm loan system they own, write your congressman and senator at Washington, and ask him to vote for the amendment to the Farm Loan Act making this possible.

EARLE W. GAGE,
Editor "Farm Loan Monthly."

Corn Shrinkage Increases Value

HOW much do farm grains shrink in storage? This question is frequently asked by farmers, particularly respecting corn, since the amount of shrinkage influences the weight of the bushel; this would, of course, influence the price for corn.

Tests at the Ohio Experiment Station show that well-matured corn has an average shrinkage of about 20 per cent, the amount ranging in an eight-year test from 6.5 to 27.7. Corn that has been stored when damp shrinks from eight to ten per cent more, it has been found.

If corn sold at \$1 a bushel in early fall, well-matured corn will be worth \$1.05 on December 1st. By March of the following year \$1.10 would be a fair price for the same bushel of corn. The increase after March 1st is gradual, reaching a value of \$1.25 by June 1st. In short, then, corn should be purchased at about 20 per cent less in the fall than on June 1st of the following year.

No Excess Profits Here

THE next time your city neighbor starts to tell you how rich the farmers are getting, enlighten him with these interesting figures: Farmers in eastern and central Kansas actually lost money on their 1919 wheat crop, according to figures compiled by the Kansas State Board of Agriculture. The only section of the State to make a profit on wheat last year was the western division, which average a gain of \$1.89 an acre.

The eastern division lost on its crop on an average of 15 cents an acre, while the central division averaged a \$1.52 loss, the entire State losing 43 cents an acre on the average.

These estimates were figured on the average cost of production per acre in each district, basing the profit or loss on the prices received for wheat up until December 1, 1919.

We would like to see some figures from other States. This is the sort of ammunition we need to go after the city fellows who think it "doesn't cost money to farm"—that "you just plant the seed and the crops grow without any effort or expense."

The Kind of Sheep to Grow, and the Time They'll Bring the Most

[CONTINUED FROM PAGE 10]

grain and hay. Along in January they are ready for market, averaging 75 to 80 pounds. The price at this time of the year, I found by watching the market and looking into the past, is generally good, being considerably higher than in September.

"The kind of lambs I buy depends upon the amount of feed I have and the condition of the grass. If the grass is poor, and I will have to feed a lot of grain and hay, I buy lambs of the small type, such as the Southdown; but if the grass is good, and I have plenty of roughness, I generally buy rangy lambs. It doesn't take long to fatten to small lambs, and because of their size it is best to feed them grain. The bigger animals, on the other hand, can eat lots of rough, bulky feed."

The price of sheep, in a large measure, is influenced by the price of wool. Many farmers clip their lambs, but whether there is an advantage in this I do not know, for clipped lambs generally sell from \$2 to \$3 lower than the woolled animals, depending upon the market for wool, and the clips the slaughtered sheep yield.

FIGURES show that there have been instances in the last ten years when the supply was considerably larger one year over another, and the price would still be higher. Presumably this is due to the wool market. In the United States we do not produce near as much wool as we use, and it may be safe to say that these higher prices occurred when the supply was short in Australia and other countries from which we import wool.

Aside from wool, the price of sheep, like that of cattle and hogs, is influenced somewhat by the supply of mutton on the market. Prices, so the charts show, advance from the first of the year until the peak is reached in April and May, due to the shortage of supplies. The run of Colorado lambs begins to give out about the first of the year, and the market could use more lambs than it gets. Along in April, the run of spring lambs starts, coming from Kentucky and Tennessee. Unless winter conditions are favorable, this run is big enough to break prices.

After it has been spent, the regular native supply is ready for market; but, because of its size, the market does not stay down long, and goes up for a month until the range starts to unload its spring crop. This supply is generally heavy, depending upon wintering conditions, and prices go down until the low spot is reached in September and October.

From then on we get the Colorado lambs, which have been fed for some time. These feeders use system in marketing, and very rarely let the supply get ahead of the demand. When the lambs are about ready or market, they ship them to feeding stations a short distance from Chicago to rest them up after the long journey, and get them in shape for the trade.

Then these lambs are let in to market as the demand warrants, it being the idea to hold up prices as much as possible.

I hope this brief picture of the sheep and lamb market will help you if you are interested.



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Anything that tends to undermine or cripple such organizations as this interferes with your own best interests as growers of live stock.



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GROWING and marketing apples has become one of the largest and most profitable industries of our great Northwest.

The story of the remarkable growth of this industry is intensely interesting. It came about simply enough and yet was a long time in the making.

Apples thrive in the Northwest and the growers soon realized that marketing them was their real problem. Right here they made a big mistake. They had the finest apples in the world, but thoughtlessly gave little attention to packing and crating them. They forgot that quality is often judged by appearance.

It is quite a different story now. Their apples are packed with great care by hand, crated in attractive boxes and neatly labeled. The growers now can rarely meet the demand for their product.

Whenever I think of this wonderful industry I cannot help comparing it with Farm and Fireside. Like the apples, it had to be right *inside* first; i.e.: its contents had to be both interesting and helpful. But I am convinced that Farm and Fireside could never have its more than 750,000 reader friends now, were it not for its clean-cut appearance that originally attracted them to the magazine.

Look at the beautiful cover on this very issue. Examine the quality of the paper the magazine is printed on. Note the many fine illustrations throughout. Some people think farmers don't care about these things. I don't agree with them.

I often wish it were possible for me to go out and tell all the farmers in this country about Farm and Fireside and how it could help them. I know they would appreciate it. And I am sure your friends and neighbors would appreciate it even more if you told them about it.

David Blair

Manager Subscribers' Bureau

FARM & FIRESIDE
The National Farm Magazine

Your Colts Will Make Better Horses If You Feed Them Right

By A. M. Paterson

IN DEVELOPING and feeding young, growing horses, we must remember that the feed and care they receive during their first year determines largely what they will be at maturity. The aim and purpose should be to secure the greatest possible physical development at the least possible cost. Often the colt is fed too sparingly, with the idea that growth which it does not make as a colt can be made up later. This is a mistaken idea—a stunted colt will never fully recover.

The young horse should be fed liberally of the right kind of feed. The mineral content of the ration, as well as the protein, carbohydrates, and fat should be considered carefully. The bony framework of the horse demands a considerable amount of calcium and phosphorus; the blood needs sodium, potassium, and iron; the nervous tissues demand phosphorus. These, together with sulphur and magnesia, are the important forms of inorganic matter that are needed.

Experience has shown me that colts make a better growth on a ration of corn and alfalfa hay than on corn and timothy or prairie hay. This is due as much to the difference in mineral content of the two rations as it is to the difference in the digestible nutrients.

Most of the feeds that contain large amounts of mineral matter—alfalfa hay, bran, and linseed meal—also contain large amounts of digestible protein. Protein is the muscle-forming element, so it is evident these feeds should enter largely into a ration fed the growing colt during that part of the year when grass is not available. With bran, linseed meal, and alfalfa hay you should combine oats, corn, barley, kafir, or milo. Cowpea hay or clover hay may be substituted for alfalfa hay.

LINSEED meal, while not absolutely necessary when bran and alfalfa hay are used, gives the horse's coat a glossy appearance, indicating thrift and good condition; also, it stimulates and aids digestion and assimilation. Horses relish a little prairie hay, straw, or corn fodder when being fed large amounts of alfalfa hay.

During the summer the cheapest and probably the best ration for the growing horse is pasture grass. If the pasture is good, little if any grain is necessary for average growth. If the pasture is poor, if the season is dry, or if the colts do not continue to grow and remain in good condition, grain should be fed, especially to the sucklings and yearlings. If a maximum growth is desired, it is necessary to feed some grain regardless of pasture conditions. Horses should have access to salt at all times.

Water supply is another important item in developing growing animals. A water shortage for a few days, or even weeks, often doesn't cause much concern. A plentiful supply of stagnant or even filthy water is deemed sufficient by some. Either condition, however, is a serious detriment to the growth and thrift of a young animal. It is just as important, particularly in hot weather, that the growing animal have a plentiful supply of clean, pure water as it is that they be well fed.

Aside from feeding, probably the most important consideration in developing growing colts is the care of the feet. Many of the poor feet seen on horses are the result of neglect while they were young. The toes should not be allowed to grow abnormally long and ill-shaped. Serious trouble may result from cracking or breaking of

the hoof. Neither should the heels be allowed to become high, narrow, or rolled.

If these ill shapes are not corrected, the feet and legs, to some extent, respond to these influences, and the horse matures with poorly shaped hoofs and often poorly set legs.

Beware of thrush and kindred troubles. If the stables are kept clean and sanitary, however, there will be very little trouble from this source. Careful attention to these details will help greatly in developing well-shaped, strong, healthy feet.

Ordinarily the growing horse will do well in winter with an open shed for pro-

tection from wind and storm under the average climatic conditions. If barn room is available, however, it will pay to put the horses in at night, but their quarters should be well lighted, well ventilated, and sanitary. During the summer season when the horses are on pasture, I find an open shed will be a profitable investment if there are no trees for protection from sun and storm.

come motionless usually have wonderfully mingled coats that melt into their surroundings. No bird of the open fields knows this trick better than our common meadow lark.

I have almost stepped upon a young meadow lark with his pale yellow breast pressed close to the ground, and his wonderful back matching the earth and the shadows in the grass so closely that he was practically invisible. The picture of the baby lark reproduced on page 11 shows absolutely how hard he was to see. The reader can learn how difficult the youngster was to locate, if he will wink his eyes as he looks at the bird in the photograph. Under these conditions the bird at once appears to melt into the soil and the growing vegetation about him.

There is not very much to be said about the young golden-winged woodpecker, or flicker, who was so young, so guileless, and new to the big bustling world into which he had suddenly come, that obtaining a good likeness was an easy matter.

DOWNS in the same orchard where the owls whined, a pair of green herons reared a family of five. These young children were very unprepossessing, as many babies are, and they were extremely slow in even becoming fairly presentable.

Fortunately for me, these young herons were rather precocious about leaving their nest and climbing about over the tree. At such times they were prone to stand rigid at the approach of anything which looked at all dangerous; in fact, they made a pretense of pecking at any offender, but they evidently did not understand the game of bluff thoroughly well.

My main interest in these baby birds, outside of their homeliness, which was so great it became a delight, was in their enormous appetites. No matter what their parents brought them, it was swallowed. Even sunfish of good size could slip into their mouths, which were split far back behind their eyes.

As I wrote earlier in this little article, it is a delight to have such an intimate acquaintance with the home life and everyday affairs of our birds.

The Buck Lamb

ARE those who ship "buck" lambs plumb crazy
Or, on the other hand, just lazy?
Buck lambs with tails look awful bad;
Besides, they make the buyer mad;
He docks the price from fifty cents
To forty shillings and five pence.
Of course the farmer tears his hair,
And curses packers who are there
To buy and sell the chops and legs
That smell to heaven on the pegs.
For no one wants to eat the stuff,
And market men won't stand the bluff.
Their customers want tender meat,
Not tough and smelly lamb to eat.
The "eat-more-lamb" campaigners sigh,
For housewives always will pass by
A "bargain" sale of bucky lamb
That really isn't worth a —
Compared with beef or fish or ham.
Now, Mister Farmer, on your life,
Don't ship a lamb without the knife!
It hurts the game year after year,
And puts the lamb biz on the queer.
—American Sheep Breeder.

tection from wind and storm under the average climatic conditions. If barn room is available, however, it will pay to put the horses in at night, but their quarters should be well lighted, well ventilated, and sanitary. During the summer season when the horses are on pasture, I find an open shed will be a profitable investment if there are no trees for protection from sun and storm.

Baby Birds I Have Known

[CONTINUED FROM PAGE 11]

By picking up each youngster and forcing a bit of juicy raw beef into its mouth and repeating this operation several times, the young hawks learned their lesson quite well; in fact, within three days the same devoted foster mother remarked sadly:

"These young rascals are as sharp as tacks. It has got so that the moment they hear me open the hall door they know perfectly well I am on my way to the pantry to feed them, and they all begin to call for food at the top of their young voices."

The photograph of these babies, which I have used with this article, was taken when they were almost fully feathered, and ready to open their mouths wide whenever their foster parent came in sight.

Some birds, like some people, are very glad to hide when danger comes near. Those young birds which crouch and be-

Wild Cucumbers a Menace

WILD cucumbers carry the mosaic disease and are a real menace to pickle-growing, declares the U. S. Department of Agriculture. In experiments conducted in Wisconsin it was found that the wild cucumber vine is the only known plant capable of carrying the mosaic disease over from year to year, and it is believed that if all vines were destroyed the disease would be checked.

The white-pickle disease is carried from the wild cucumber to the cultivated plant by the striped cucumber beetle. It feeds on the infected wild plants early in the year, and then, when the garden variety gets to growing well, carries the infection to them.

The Department of Agriculture recommends the extermination of all wild cucumber plants and the substitution of harmless ornamental vines.

It takes only a few minutes each week to keep a complete record of the farm business; and with accurate figures at hand a man can see at a glance, at the end of the season, where he is making money and where he is losing it.



Things to Watch in Culling Poultry

DID you ever see a good lumberman go into a wood lot and clean out the underbrush and dead wood, and then watch the way the remaining trees grow? Or have you watched a fruit grower clean up an old apple orchard, cutting out dead wood and old limbs that were in the way, and which were not bearing fruit. Well, that's just what should be done to a good many farm flocks. Not only will culling reduce the feed bills in direct proportion as to the number of hens taken out, but it will give the remaining flock more room and a better chance.

In every healthy farm flock there are some hens that are laying 200 or more eggs a year, while there are others, if they have never been culled, that are laying hardly two dozen. In recent years accurate methods have been worked out for distinguishing between the laying and the slacker hen. If you have ever kept an egg record you probably have noticed that in June or July, about the time when the weather begins to get disagreeably warm, the eggs will begin to drop in number.

On studying individual records of the average flock, it was found that even the best of hens tend to let up a little at this time. But the factor which causes most flock records to fall is the fact that some hens stop laying altogether. These hens usually loaf from early summer until mid-winter. They seldom lay enough eggs in a year's time to pay their board.

The hen that stops laying in the early summer can be easily detected. She will usually be found to be molting, and either half bare or growing new feathers. On handling her, the lay bones, the two small pin bones on each side of the vent, will be found hard and stiff and often very close together, hardly more than half an inch apart. The vent will be small, puckered, and dry. If this hen is fat and in good flesh, kill and eat her right away, before she eats you out of house and home. If she is thin, confine her for a week or ten days and feed her plenty of corn and skim milk or buttermilk. She will fatten up in a hurry, and then let her have the ax.

OCASIONALLY a good hen is found to be resting at this season. It will take but a second to recognize her, as she will have, if a yellow-shanked variety, pale yellow or ivory-colored shanks and beak. One must be sure that this pale color is due to heavy laying and not to illness. A description of a sickly hen is not necessary here, as this condition will be obvious. If the hen has yellow shanks, or if she has already gone through two or more years of laying, and is found resting in summer, you can't make a mistake by getting rid of her.

The broody hens, which are so common at this season, afford a mighty good opportunity to take out the dead wood. Broody hens are not all poor layers, but a great many are. While taking these pests off the nest, examine the lay bones, and look at the vent. If the vent is dry and small, the hen is usually a persistent setter and a poor layer. If the lay bones are hard and close together, if the keel bone is bent up near the lay bones, and if the skin over the abdomen is hard, thick, and tough, you can be sure the hen doesn't pay her board.

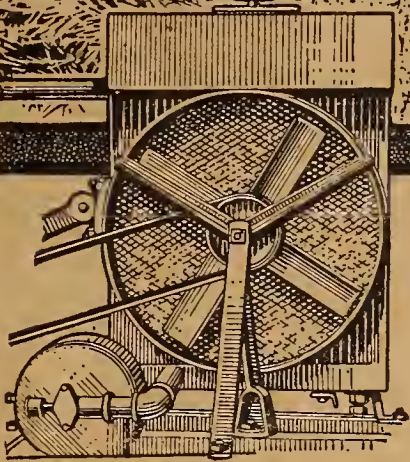
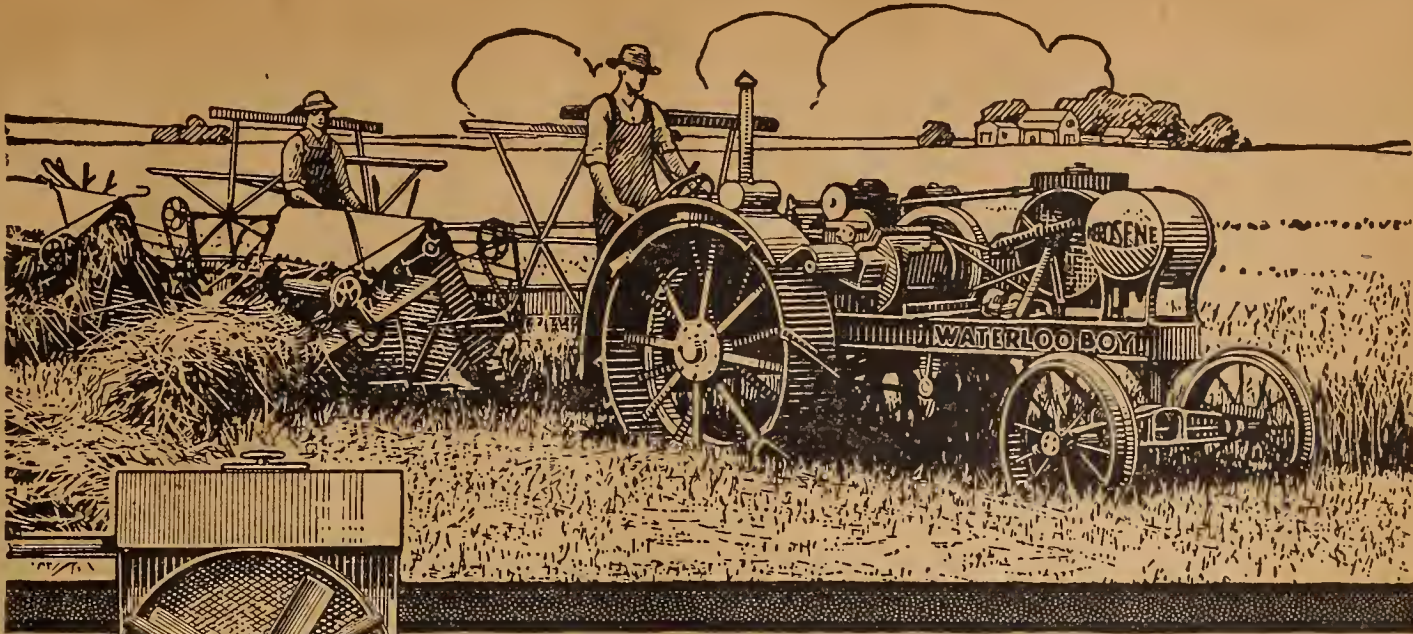
If, on the other hand, this broody hen's lay bones are spread and pliable, with the keel bone carried low, the skin on the abdomen soft and pliable, the vent large and moist, her shanks pale yellow or ivory color, put a distinguishing band on her. She will bear a good test later in the fall, when you are selecting breeders. When you make your final culling and selection, this type of hen is often the very best.

This midsummer culling is not for the purpose of picking out breeders, but to dispose of poor hens and non-producers. Midsummer is the best time to start this culling, but continue it through the summer until fall. How to make your final selection will be described in a later issue.

VICTOR G. AUBRY.

Orchardists Fight Pests

FRUIT GROWERS of the Berrien, Allegan, and Van Buren county farm bureaus, Michigan, are combining their efforts to rid their orchards of pests. Their first step has been jointly to employ J. W. Simonton, entomologist, who for several years has been in charge of the government station at Benton Harbor, Illinois. He will advise on how to destroy insects, fungi, and the like, and will put the solving of their orchard problems on a scientific basis.



A centrifugal pump, four-blade fan and large size, honey-comb type radiator insure positive cooling on the Waterloo Boy.

John Deere Implements, Waterloo Boy Tractors and Kerosene Engines are distributed from all important Trading Centers. Sold by John Deere Dealers everywhere.

Uniform Cooling Keeps The Engine on the Job

THE cooling system of a tractor gets its real test during the heat of harvest and early fall plowing. It is then that you can rely upon the Waterloo Boy—the pump, fan and radiator system of cooling always keeps the engine on the job.

WATERLOO BOY

BURNS KEROSENE COMPLETELY

To secure uniform power you must have uniform cooling. The pump, fan and radiator system used on the Waterloo Boy positively assures uniformity in circulating cooling water.

It holds the engine at the right temperature for proper lubrication, and maintains sufficient heat to insure complete combustion and full power from the fuel.

An even temperature is maintained at all operating speeds because the speed of the pump and fan is automatically controlled by the speed of the engine.

You get a big radiator on the Waterloo Boy. It holds thirteen gallons. You won't find it necessary to stop in the field every few hours on a hot day and fill it.

The cooling system is but one of the Waterloo Boy's superior features. Its simplicity and accessibility, its powerful 12-25 H. P. engine, its ability to burn kerosene and burn it right, its Hyatt roller bearings that eliminate friction, and a drawbar shift lever that gives you the correct line of draft on all tools, all contribute to make it a real farm tractor.

We want you to read a booklet describing the Waterloo Boy. Write for it today. Address John Deere, Moline, Illinois, and ask for Booklet WB-68.

JOHN DEERE



THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

Best Grade Linseed Oil PAINT

Here is a chance for a real bargain in the best grade linseed oil paint. Send for sheet of paint bargains—starting at \$3.20 per gallon. Every gallon backed by our \$10,000 guarantee of money-back-if-not-satisfied.

Everywhere, farmers have proved that our paint stands up for years.

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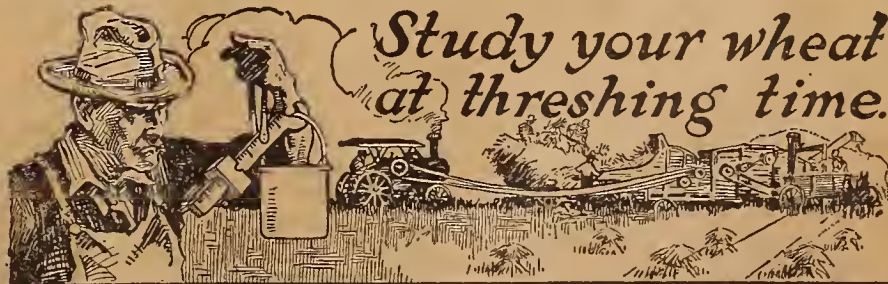


MONOGRAM YOUR CAR

Letters of Beautiful French Gold Leaf, with black outline. Old English or Script. With our full instructions, anyone can easily monogram his own car. Two sets \$1.00. State style and letters wanted.

A. HORSTMAN & FIETZ, 8126 S. Green St., Chicago, Illinois

If you want to Sell or Exchange your farm, city property, land or patent, no matter where located, write me. JOHN J. BLACK, 71 St., Chippewa Falls, Wisconsin.



OF course, you are very busy then but it will pay you to take time to find out not only the yield but the *real quality*. Is the weight per struck bushel up to the standard? Does it grade high enough to bring the top price in your market? Is the weed seed box free from light chaffy wheat grains? Has the clover and grass made a good set in the stubble? If not, why not? Five years of potash starvation has had its effect on wheat lands. Enough German Potash has now come forward, so that those who wish can buy wheat fertilizer with 4 to 6 per cent. of *real potash*. Tell your dealer now what you want and insist on having it.

Potash Pays

Soil and Crop Service Potash Syndicate
42 Broadway H. A. Huston, Manager New York

Montgomery Ward's Price Cutting

SALE

Is
Now On!



THE 152-page Sale Book brings it right to your door—gives you your choice of almost 3,000 bargains! Your copy of the Sale Book should have reached you before this. If it hasn't, please write us for one; but use your neighbor's meanwhile. Our prices—always low—are reduced more sharply than usual in this great sale.

The range of offerings is large—dry goods, shoes, clothing, kitchen utensils, household equipment, farm implements, furniture, phonographs, auto tires and accessories, paints and oils, hardware, drugs, jewelry, baggage, groceries—nearly every kind of merchandise in common demand. You can make your dollar bring you 100 cents in value every time.

Order Now—Sale Ends August 31

You should order early if you want to realize on the savings made possible by this Sale. Not in many months have you had opportunities like these to buy such values at reduced prices.

Always remember that our guarantee of "Satisfaction or Your Money Back" means just what it says. If after you

have ordered goods you do not find them 100% up to your expectations, return them. We will not only refund the purchase price, but will pay the cost of transportation both ways.

We suggest that you order early. Our stocks are large, but sometimes demand on certain lines exceeds our expectations.

If your copy of this book has failed to reach you, write us for another FREE copy at once. Ask for Sale Book M60

LOOK AT THESE PRICE CUTS!

Misses' Flowered Voile Dress



See Page 24 of Sale Book for this lower-than-wholesale-price bargain. Order by No. 15M8715 for dress in Rose; by No. 15M8717 for Blue. A becoming dress of floral voile, youthful pattern—trimmed with smart knife-pointed organdie frills providing a charming touch of color at neck and sleeves. Self-material sash at back. Visible pearl button closing. Sizes, 7 to 14 years. Shipping weight, 1 pound.

Wise mothers will eagerly grasp this extraordinary bargain. Sale price, each \$1.98.

Jap Silk Embroidered Waists



See Page 22 of Sale Book for Jap Silk Waists at wholesale cost! The silk was bought in Japan last September at half the price demanded today. Order by No. 15M8673 for White; No. 15M8675 for Black; No. 15M8677 for Flesh. Smart tailored model. Front panel exquisitely embroidered. New style sailor collar. Modish cuffs of self-material. Why not buy at least two of these waists? \$3.98. Shipping weight, 13 ounces; sizes, 34 to 46.

All-Silk Crepe de Chine



See Page 14 of Sale Book for this money-saving offering—A Yard Order by No. 17M2513. A Yard Soft, lustrous, all-silk crepe de chine—in Ivory White, Flesh, Tan, Steel Gray, Reseda Green, Mauve Gray, Black, Wine, Plum, Nickel Gray, Myrtle Green, Helio or Navy Blue. State color wanted. Width, about 39 inches. Supply your needs for a year ahead now at this surprising price—\$1.98 per yard. Shipping weight, per yard, about 1 1/4 oz.

Women's Brogue Effect Oxfords



See Back Cover of Sale Book for this and other shoe bargains. Order by No. 24M196. Women's Brogue Effect Dark Brown Walking Oxfords—size, 7 1/4 to 8—widths, D, E, or EE. Splendidly fashioned from rich brown kid finished with leather. Strong but light in weight, and cool. The vogue in New York and Chicago. Imagine getting this kind of smart, durable footwear for \$4.89 per pair. Shipping weight, per pair, 1 1/2 pounds.

Munson Army Last Shoes



See Back Cover of Sale Book for this and other splendid shoe bargains. Order by No. 24M1629. Sizes 5 to 12. Wide width. Men's Munson Army Last Shoes made with exceedingly soft, durable brown uppers and long-wearing soles. Triple wax thread stitched—heavily re-enforced vamp—soft flexible guaranteed insoles. A wonderful bargain for farmers, railroadmen, firemen, postmen, policemen and all outdoor workers. Shipping weight about 3 pounds.

Young America ALL-WOOL Boys' Suits



See Page 57 of Sale Book for this startling bargain. Young America Boys' Suits—guaranteed all-wool—splendidly tailored—built for both style and wear. Choice of 5 shades: No. 39M324—Brown Cassimere; No. 39M336—Brown and Maroon Cassimere; No. 39M340—Navy Blue Serge; No. 39M328—Olive Cassimere; No. 39M332—Gray and Olive Cassimere. Single-breasted coat with four pockets, detachable belt and tucked back. Lined with Gibraltar guaranteed serge. Made with hair cloth interlinings to prevent curling or breaking. Knickers are full lined and all points of strain re-enforced or bar tacked to prevent ripping. Shipping weight, about 3 3/4 pounds.

Write
House
Nearest
You

Montgomery Ward & Co.
Satisfaction Guaranteed or Your Money Back

Chicago
Kansas City
Fort Worth
Portland,
Ore.

How's Your Baby?

OUR baby has come home, and is strong and healthy. He weighs eight pounds and six ounces, is gaining every day, sleeps well, and has a very good appetite.

My wife thought it safer to stay at the hospital until she was entirely well, and we put off sending in the card until she returned. She wishes me to thank you for your wonderful letters during the trying time she went through, and to tell you that they were so complete that she did not feel the need of further correspondence with you at the time. If we had had to depend on the two grandmothers, we would certainly not have had the easy time that we did have; as it is, we have all we can do to prevent them from entirely spoiling the baby, and are all the time quoting to them from our "baby bible," Infant Care, but without making much impression.

I enclose 50 cents for the continuation of your letters. If they are as helpful as the others, they are certainly worth a great deal more than 50 cents.

Had it not been for the letters, the baby would have been bottle-fed, as my wife thought the bottle-fed baby was healthier (more grandmother!), and I didn't know anything about it, but wanted it breast-fed because I "thought" it must be better.

We thank you for your trouble, and hope for a continuation of your advice.

Mr. & Mrs. J. O. W. P., New Hampshire.

YOUR letters were a wonderful inspiration to me during the nine months of expectancy, and I advise all my friends to send at once for your literature when they find a baby is coming to their home.

I came out with flying colors and a 9 1/4-pound boy. He is a perfect specimen of health, and we attribute it to your great work. I followed your directions religiously, and now know prenatal care is half, or more, of the battle. Instead of calling my physician at the slightest trouble, I'd consult my letters, and always found a successful remedy.

Enclosed find registration card, also 50 cents, for which please send the monthly letters on the care of the baby.

Mrs. T. H. M., Mississippi.

IT IS to your department, which furnished me with the helpful letters before the baby came, that I owe a debt of gratitude. These letters are a world of comfort and help to expectant mothers. The greatest way in which they help is the self-reliance they give to a person. "Bring on your bath, Mother! This less—Let's go!"



What the Better Babies Bureau Is And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible, whether she is a subscriber or not, may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with Fifty Cents in stamps, for postage, and state what month you expect your baby.

THE MOTHERS' CLUB: Every mother of young children is eligible and need not be a subscriber to join. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends Fifty Cents in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for Ten Cents. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

BETTER BABIES BUREAU

or to Mrs. Caroline French Benten, Counselor

FARM AND FIRESIDE

381 Fourth Avenue, New York City

sens the nervous strain and prevents outside interference from having any effect.

I could mention many, many other helpful suggestions received, but it would make this letter of thanks too lengthy and take too much of your time. I thank you again and again, and enclose the 50 cents in stamps for membership in the Mothers' Club.

Mrs. J. M. T., Virginia.

JUST received this morning your very helpful letter regarding our baby, who is now in his eighth month.

The care of our baby has left but little time to write and tell how much we have appreciated your extremely helpful letters, which have come regularly at times when they were most needed. Now, as we look back over the last seven months, it seems as if it would be impossible to have such a splendidly healthy baby had it not been for them.

Recently my wife and I have been wondering what was best to give little "Mac," and if he should

have anything other than his breast food. This noon, when I arrived for the midday meal, I was greeted by the most welcome news that the Babies Bureau had sent a letter telling how and when and what to give the baby. We certainly did rejoice.

But to make a long matter short, we have a boy in his eighth month. He weighed nine pounds at birth, and now weighs twenty-four pounds. Every pound of him is solid flesh. He is a boy who absolutely will not sit down when he thinks there is a possibility of standing, and who sees everything that is going on around him.

In view of his excellent health and spirit, we feel that we owe to the Babies Bureau far more than words can ever tell, for the close attention it has paid to our every need.

W. M. R., New York.

AFTER many very busy days I find a spare moment in which to let you know of the safe arrival of our Better Baby. I am quite sure you would heartily agree that she is one of the very best ones too. In a great measure I owe her good health and disposition to the care I took of myself, in accordance with your good letters of advice.

She weighed eight pounds at birth, and now weighs ten at six weeks. She measured 20 inches at birth, and now 23 inches. Everyone who sees her remarks what a contented, good-natured child she is.

I am now sending her registry card and the 50 cents to register her in the Bureau for this coming year, for I feel the letters of counsel will mean much to me.

Mrs. P. R. R., Texas.

Have Some Summer Kisses?

By L. M. Thornton

These recipes have been tested in Farm and Fireside's experimental kitchen

THE following recipes will give you three of the very nicest summer kisses, warranted to melt in your mouth and not to cause either headache or stomachache after indulgence in them:

DAISY KISSES

4 egg whites $\frac{1}{2}$ teaspoon lemon juice
 $1\frac{1}{4}$ cups powdered sugar $\frac{1}{4}$ teaspoon vanilla

Beat whites until stiff. Add sugar gradually. Continue beating. Add vanilla and lemon juice. Drop from the spoon on a baking sheet covered with damp paper, or on buttered paper. Bake in a very slow oven for thirty minutes, or until brown.

SEA-FOAM KISSES

$2\frac{1}{2}$ cups brown sugar 2 egg whites
 $1\frac{1}{2}$ cups water $\frac{1}{4}$ teaspoon vanilla

Boil the sugar and water until the syrup will form a soft ball when dropped from the spoon into cold water. Beat the whites of

the eggs very stiff and beat them into the warm syrup. Beat the mixture until it begins to thicken and then drop on buttered paper. As the first spoonful flattens, pour a second on top of it. The addition of a nut meat to every piece makes very attractive candies.

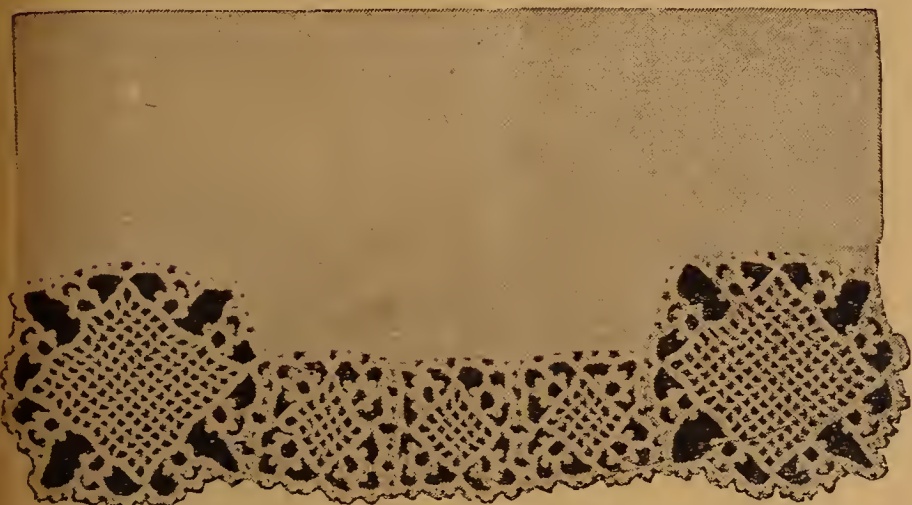
DIVINITY KISSES

2 cups sugar 2 tablespoons gelatin
 1 cup water tin
 1 lemon $\frac{1}{2}$ cup cold water
 1 cup nut meats

Boil the sugar and water together until it reaches the soft-ball stage—that is, until the syrup forms a soft ball when dropped in cold water. Then add the grated rind and strained juice of one lemon and the gelatin which has been soaking in one-half cup of cold water for two hours. Beat until it begins to harden, add the nuts, and pour in shallow dishes to cool. When cold cut in dice or heart shapes, and roll in confectioner's sugar.

Table Runner in Ornate Squares

FC-127



THE above table runner will be glad to add to the delight of your reading hour. For complete directions send four cents in stamps to the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio, Order No. FC-127.

A New Kind of Fun from Bottles

By Ruth H. Frost of Massachusetts

IT WAS once my lot to entertain a mixed crowd of men and women as well as young folks of various ages, many of them strangers to each other. I was beside myself to know what to provide for amusement in which all could participate.

Just a little before I had been cleaning out some closets and drawers, and had collected in a heap a number of bottles—ink bottles, vanilla bottles, vinegar bottles, medicine bottles, syrup bottles, etc., that somehow or other always accumulate around a house. These gave me my inspiration.

But before my "bottle game" I had to provide one for getting acquainted. As each guest arrived, he or she was given a dozen pins and a dozen large capital I's cut out of paper. The object of this game was to get rid of the letters. Everytime a person used the personal pronoun I, he had one of these capital I's pinned on his back by the person he had addressed. When all the guests had arrived, a booby prize was given to the person who had the most I's on his back. (It was forty!) The prize consisted of an egg beater with a card attached, on which was written, "If you can't beat this game, beat eggs."

THEN came the chief amusement of the evening, which I planned with fear and trembling, not knowing how it would "take" with this assorted crowd. On a table in each of the three rooms where my guests were assembled—the dining-room, the library table in the living-room, and a card table in our rather large hall—I had placed an assortment of bottles of all sizes and descriptions, also scissors, library paste, glue, pen and ink, colored pencils, pins, needles and thread, bits of lace and ribbons, parts of old hats, bits of wool and cotton, and the contents of my rag bag. Then

I announced that prizes would be offered for the best dolls to be dressed from these bottles in an hour.

Though I had been skeptical as to the outcome, the way my guests laughingly "fell to," old and young folks alike, convinced me that here was an amusement all could enjoy hugely. The results were astonishing—way beyond my expectations.

THE judges were chosen according to their height—the two tallest and the two shortest of the party. The first prize went to a man of fifty, who had ingeniously made a stout-colored "Aunt Dinah" from a fat ammonia bottle. He received a bottle of stick candy for his cleverness. The next prize went to a girl of sixteen, who had made a stylish Parisian doll from a tall olive bottle. Her work was rewarded with a bottle of grape juice. The third went to the youngest member in the group, a big bashful boy of thirteen, who had rather unwillingly submitted his effort, a baby doll in long clothes made from a long pill bottle.

I told the guests they could take home their dolls if they wished, and most of them did. The few that were left I gathered up the next day and took to some sick children in the neighborhood.

My refreshments had been the cause of some thought, because it is sometimes hard to find things that appeal to people of various ages. I finally decided on pie à la mode and coffee. It made a decided hit with the men, this apple pie with ice cream.

I have always noticed that if folks have a "sing" just before leaving a party, they go home with a good taste in their mouths, all feeling they have had a good time. So at ten-thirty we gathered around the piano, and for about half an hour sang songs everybody knew.



The Gloves of a Thousand Uses

RAILROADERS, teamsters, builders, motormen, farmers, packers, movers, janitors, linemen, deck-hands, plasterers, street cleaners, gardeners, ash collectors, stone masons, pilots, painters, truck drivers, lumbermen,

—ironworkers, pavers, bricklayers, carpenters, stokers, machinists, foundrymen, everyone, man, woman or child, who does any hand work of any kind should wear Boss Work Gloves. They protect from dust, dirt, grease, paint, and minor injuries. They are economically priced to suit every purse.

Boss Work Gloves are heavy and tough enough to wear well through the hardest kind of usage—yet they are flexible enough to permit a thorough "feel" of the work in hand.

They are easy to slip on and off.

And they come in different weights adaptable to every conceivable requirement with band, ribbed, or gauntlet wrists. Sizes for men and women, boys and girls.

Ask your dealer for a pair of these Gloves of a Thousand Uses. Look over the four best sellers listed below.

THE BOSS MEEDY—The world's favorite work glove for odd jobs around the house and garden, and all light hand-work. Made of the best quality, medium weight canton flannel.

THE BOSS HEVY—The best bet for all work that requires a strong, wear-resisting glove. Made of the very best quality, heavy weight canton flannel.

THE BOSS EXTRA HEVY—The world's champion heavy-weight handwear for rough work. Made of the finest grade of extra heavy canton flannel.

THE BOSS WALLOPER—This is the superior work glove. Strong, flexible and built for rugged work. Made of the highest quality, heaviest weight canton flannel.

The Boss line includes highest quality leather-palm, jersey, ticking, and canton flannel gloves and mittens

This Trade-mark identifies genuine Boss Work Gloves. Be sure it is on every pair you buy.



THE BOSS MANUFACTURING CO.
 Kewanee, Ill.





Drink Coca-Cola
DELICIOUS and REFRESHING

—when "delicious and refreshing" mean the most.

THE COCA-COLA COMPANY
ATLANTA, GA.

222F

Nuggets from "Household Mines"

Of Farm and Fireside Readers

WHEN my icing turned out to be too soft, and I knew it would run if applied to the cake, I went confidently to my box of confectioner's sugar to add to it. I found the box empty. The icing was boiled sugar and water poured over the white of an egg, and beaten until cold. I knew I could not reboil it, so thought of using puffed wheat, crushed to a powder. Not only did it work fine, but my family remarked upon its good taste, and were glad I had been so liberal with the "nuts" in the icing—I had used a few pecans. F. A. R., Oklahoma.

I often think of various jobs for the men folks to do about the house, lawn, garden, or chicken yard. So I've tacked up a piece of burlap near the door leading out from the kitchen, and here I post a list of things to be done that will save me many steps. Besides this list, there are other notices on the bulletin board.

I hang there a note, if I go away unexpectedly, telling where I am, and what they will find for dinner. A paper pad is fastened there with an attached pencil, whereon are jotted down, as soon as they are thought of, any articles needed from town.

When my young nephews and nieces come visiting to the country, I write a list of things they may do, one for morning and one for evening in regular routine, so they can help me. It's interesting to them to see how quickly the entire list is completed, and they are free to play or "explore."

The board has saved me much talking and directing, and leaves my mind free to act along other lines. Mrs. V. A., Illinois.

Wishing to hang up the ordinary sheets of fly paper, and finding they dripped whenever I did so, I discovered the following simple method of arrangement.

I cut the bottom off a heavy paper sack, leaving a half-inch rim (a coffee sack is good, or one end of an oatmeal or sugar carton). I puncture this "cup" in the center, and insert a string with a knot on the end to prevent its slipping through.

Then I curve the fly paper around the string, and pin it together with two pins, and rest one end of the roll in the paper cup. I insert another string in top edge to hang by, and tie center string to it. You will find it catches flies much faster hanging up than lying flat. Besides, it is out of the way, which is a great relief.

Try hanging one on the kitchen porch to catch some of the flies before they get inside the screen door.

E. M. H., Virginia.

Did you know that you could unravel a knit sweater (not home-knit, but machine-made) and make a new one? You can, but you must begin carefully, and hank it in small hanks as you go; don't roll it into a ball. Wash each hank in soft water and soap, then with any color of dye soap you choose. Follow directions on the dye soap. Then reknit or crochet. If you wash the sweater first, before unraveling, it will shrink and be very hard to unravel. After it is clean and dry wind it into balls. You could, of course, dye it with other dyes, but boiling the wool shrinks it, and spoils its luster.

F. A. R., Oklahoma.

I have found in my usual routine of duties that much time and labor can be saved by using the following suggestion:

Place two needles on the end of the ironing board, together with a thimble. One needle should be threaded with white thread and the other with black. When a button is found to be coming off, one should sew it on immediately. In this manner one prevents the overlooking of such small matters. Rents in garments can be sewed too, although larger places where patching is needed will delay ironing. If you perform this operation you will see the truth of the saying that "a stitch in time saves nine."

C. L., Pennsylvania.



Mother's feet ached every night

NO wonder, either. On them all day long doing things for other people. Dad brought her some

Mentholatum
A HEALING CREAM

Always made under this signature *A. H. H.*

Mother tried it—and what a relief! The ache and throb were gone and her feet felt like nineteen instead of ninety.

Now she sings all the time

Use Mentholatum for sunburn, too—it cools the pain and heals the burn. Keep it handy for cuts, bruises, and other "little ills."

Mentholatum is sold everywhere in tubes, 25c; jars, 25c, 50c, \$1.

The Mentholatum Co.
Buffalo, N. Y.

AGENTS: \$60 a Week

taking orders for guaranteed hosiery for men and women.

All styles, colors, and finest line of silk hose.

Guaranteed One Year Most Wear 12 Months or replaced free

Often take orders for dozen pairs in one family. Permanent customers and repeat orders make you steady income. Whether you devote spare time or full time, it will pay any man or woman to handle this line. No experience necessary. Get started at once. This is the best season of the year. Write quick for samples.

Thomas Hosiery Co., 3546 Elk St., Dayton, O.

AGENTS

Write quick for samples of Zanol Soft Drink extracts. All flavors. Orangeade, Cherry, Grape, etc. Not sold in stores. Sells in every home. Wonderful demand. Made at home in a minute. No tax to pay. Costs less than one cent a glass.

Make \$200 a Month

Greatest Agents' proposition in years. Roberts made over \$200 last month. He writes: "I sell in almost every home. Prohibition will double my income." Easy seller. A big repeater. Take orders every day. Steady income. Hundreds of our Agents making big success. Territory going fast. Write quick for agency and samples.

American Products Co., 2097 American Bldg., Cincinnati, O.

ROUGH ON RATS

Rough on Rats

Eliminates rats and mice from houses, barns, outbuildings, etc. Economical and sure. Better than cats and traps. Mix it with any bait that rats and mice eat. At drug and general stores—Write for Booklet—"Ending Rats and Mice."

E. S. WELLS, Chemist,
Jersey City New Jersey



Kitchen Comfort

Don't stand over a hot stove—National Pressure Cooker cooks whole meal on one burner, at low flame. No watching—foods won't scorch or burn. Cooks baked beans in 30 minutes. Ask us why.

Beat High Cost of Living Steel Canner

Turn waste to profit. Can all fruits and vegetables the old pack way in National Steel Canner. Safest method of canning. More effective sterilization. Write for book on cooker and canner.

Northwestern Steel & Iron Works
810 Spring St.
Eau Claire, Wis.

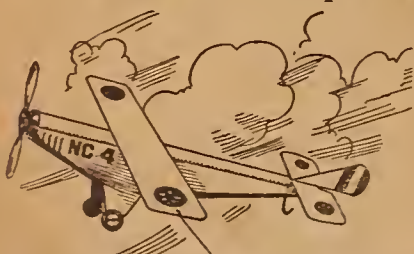
You can be quickly cured, if you

STAMMER

Send 10 cents coin or stamps for 70-page book on Stammering and Stuttering, "Its Cause and Cure." It tells how I cured myself after stammering for 20 years.

Benjamin N. Bogue, 1359 Bogue Building, Indianapolis

It's great fun to fly this wonder monoplane



This dandy plane is far superior to a kite. Has rubber-tired wheels, a propeller that whirls like the real thing, and is beautifully colored. So easy to get one, too. Send us only 5 one-year subscriptions to *Farm and Fireside*, gotten from your friends, and the monoplane is yours. Address your subscriptions to **Farm & Fireside** Springfield, Ohio

Delivered TO YOU FREE

Your choice of 44 styles, colors and sizes in the famous line of "RANGER" bicycles. We pay the freight from Chicago to your town.

30 Days Free Trial allowed on the bicycle you select, actual riding test. EASY PAYMENTS if desired, at a small advance over our Special Factory-to-Rider cash prices. Do not buy until you get our great new trial offer and low Factory-Direct-To-Rider terms and prices.

TIRES, LAMPS, HORNS, pedals, single wheels and repair parts for all makes of bicycles at half usual prices. SEND NO MONEY but write today for the big new Catalog.

HEAD CYCLE COMPANY Dept. G-83, CHICAGO

MENDETS—WONDER MONEY MAKERS

Mend leaks instantly in all utensils, hot water bags, etc. Insert and tighten. 10c and 25c a package, postpaid. Agents Wanted. Collette Mfg. Co., Box 704, Amsterdam, N. Y.

A cool kitchen

Simply turn a valve and cook

30 Days Trial The Oliver Oil-Gas Burner is an attachment that makes any cooking or heating stove a gas stove. No coal or wood. Cooks and bakes better than coal or wood in the same stove.

Makes Its Own Gas from coal oil (kerosene) at one-fourth the cost of city gas. Everybody knows gas means cleaner, cheaper, quicker cooking, and a cooler kitchen. No fires to start, no ashes, no chopping, shoveling, poking and dragging of coal. Saves hours of work and loads of dirt. No smoke nor odor. You regulate heat with valves. Simple, safe, easily put in or taken out. Simply sets on grate. No damage to stove. Lasts a lifetime. Thousands of users. In use 10 years.

SAVES MONEY—FITS ANY STOVE 16 different models, one for every stove. Write for free literature—tells how two gallons kerosene equals more than ninety-seven pounds of coal.

AGENTS MAKE BIG MONEY. Write for Agency.

Oliver Oil-Gas Burner & Machine Co., 2003 Pine St., St. Louis, Mo. Western Shipments From San Francisco.



Here's the Soap That Gets the Dirt

Just in from the fields—hot and dusty; skin covered with sweaty grime.

That's the time you'll appreciate Goblin; it dissolves every particle of dirt and lathers freely in cold hard water. Leaves you feeling fresh and strong and clean; works wonders for the hardest worker; does not injure the tenderest skin.

At your grocers; if he hasn't it send the coupon for a free trial size cake of Goblin.

Goblin Soap

Regular Trial Size Cake Free

CUDAHY, Dept. F
111 W. Monroe St., Chicago
64 Macaulay Avenue, Toronto, Canada

Please send me trial size cake of Goblin Soap.

Your Name.....

Street.....Town.....

Grocer's Name.....

Grocer's Address.....

TELL TOMORROW'S

White's Weather Prophet forecasts the weather 8 to 24 hours in advance. Not a toy but a scientifically constructed instrument working automatically. Handsome, reliable and everlasting.

An Ideal Present
Made doubly interesting by the little figures of the Peasant and his good wife, who come in and out to tell you what the weather will be.
Size 6 1/2 x 7 1/2; fully guaranteed. \$1.25
Postpaid to any address in U. S. or Canada on receipt of
Agents Wanted
DAVID WHITE, Dept. 15, 419 E. Water St., Milwaukee, Wis.

Kill Rats New Way

In France the World's greatest laboratory has discovered a germ that kills rats and mice by science. Absolutely safe. Cannot harm human beings, dogs, cats, birds, chickens or pets. Quickly clears dwellings and outbuildings, with no offensive after-effects. It is called Danysz Virus.

Free Book Get our free book on rats and mice, telling about VIRUS and how to get some.

H. E. Virus, Ltd., 121 West 15th Street, New York

SALE OF U. S. Army and Navy Goods

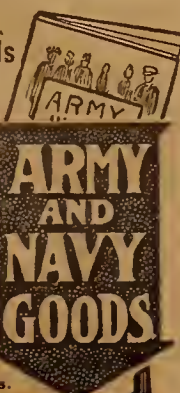
For Camp and Summer Outfits

Ask for big catalog 108 today

Army Khaki Shirts	\$2.00
Navy Underwear	.75
Army Ponchos	1.25
Army Wool Breeches	2.50
Khaki Trousers	2.50
Army Pop Tents	3.50
Army Mess Plates	.25
Army Blankets	5.00
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and all other articles for camp or outdoor use

SEND 10c FOR ARMY & NAVY CATALOG—108—AND BUY AT AUCTION BARGAIN PRICES
ARMY & NAVY STORE CO.
245 West 42d St., New York
Largest Camp and Military Outfitters.



Important News for Ex-Soldiers



EVERYBODY knows about the valiant service performed by farm boys during the Great War. No men were quicker to join the forces, and the record they left as willing workers and gallant fighters will live forever. The American Legion has been formed to keep joined together the veterans who fought over there, or who did their duty over here. Believing that FARM AND FIRESIDE readers include many ex-soldiers who are interested in the American Legion, and possibly some who have benefits coming to them from the Government and don't know how to go about getting them, arrangements have been made with the National Headquarters of the American Legion to answer inquiries on subjects of interest to ex-service men.

If you still have pay or clothing coming to you, if you didn't get your bonus, if you want to know how to join the American Legion, how to reinstate your insurance, or anything else connected with your relations to the War Department, write to A. S. Wing, "American Legion Column," FARM AND FIRESIDE, 381 Fourth Avenue, New York City, enclosing a self-addressed stamped envelope, and you will be given the information you want direct.

Homestead Residence

QUESTION: Can an ex-service man who files on a homestead, and who is engaged in vocational training under the Federal Board, have an extension of the six-months period within which he is required to go on his land?
P. S. W.

Disabled soldiers, sailors, and marines taking training under the Federal Board for Vocational Education, and who have made entry on public lands prior to beginning their training courses, are entitled to absent themselves from their land during the period of training. The law further provides that absence from the land during the period of training shall be counted constructive residence in obtaining patent to the land.

Medical Treatment

QUESTION: I was injured in the service, and am drawing compensation. I am in need of medical treatment. Does the Government furnish this free of charge, and to whom should I apply?
A. H.

Yes. Write to District Supervisor U. S. Public Health Service. New York State Office is at 23 West Forty-third Street, New York City.

Minnesota Bonus

QUESTION: Does the State of Minnesota pay a bonus to returned soldiers? If so, to whom shall I apply for it?
J. C.

Yes. \$15 for each month in service. Necessary forms can be obtained from Soldiers' Bonus Department, Adjutant General's Office, Capitol Building, St. Paul.

Agricultural Courses

QUESTION: How many men are taking agricultural courses with the Federal Board for Vocational Education?

On February 28th almost 3,000 men.

Government Insurance

QUESTION: I was discharged December 7, 1918, and have paid no premiums on my insurance since. Can I take it up again, and how much will it cost me to reinstate it? I am twenty-three years old.

You can reinstate at any time prior to July 1, 1920. It will cost you \$1.30 for each \$1,000. After first month it will cost 65 cents a month per \$1,000.



Dance to the music of famous bands and orchestras —on the Victrola

The very latest and most tuneful dance numbers, played by musicians who are past masters in the art of delighting dance lovers. All the dash and sparkle and rhythm that make dance music so entrancing. And always ready on the Victrola!

Hear the newest dance music at any Victor dealer's. Victrolas \$25 to \$1500. Write to us for catalogs and name of nearest Victor dealer.

Victor Talking Machine Co.
Camden, New Jersey



HANSEN'S DAIRY PREPARATIONS



Making Cheese on the Farm

Hansen's Rennet Tablets and Hansen's Cheese Color Tablets enable you to make just as good cheese as is made by experts in large cheese factories.

To make small amounts of cheese or to make Cottage Cheese use **Hansen's Junket Tablets**.

Junket Brand Buttermilk Tablets are used for ripening milk for cheese, cream for butter and making delicious buttermilk.

Hansen's Dairy Preparations are standard. Sold at druggists, dairy supply stores or direct.

Valuable booklet, "The Story of Cheese," free with \$1.00 order. Send for particulars.

Chr. Hansen's Laboratory, Inc.
LITTLE FALLS, N. Y.

THE STANLEY WORKS Garage Hardware

Set No. 1783

Your garage doors are certain to give satisfaction if equipped with Set. No. 1783—a favorite among those who desire door safety as well as door service. Complete descriptions of THE STANLEY WORKS Garage and Barn Hardware are contained in illustrated booklet FF7. Write for a copy.

THE STANLEY WORKS
New Britain, Conn.
New York Chicago





The Great Unrest

THIS COMPANY believes that one of the most vital problems of the day is that of keeping youth content on the farm. We are passing through a critical period. Industry, wages, prices, all the old familiar standards and forces in our national life, are unsettled and upset.

You need no reminder that the contagion of this restlessness has infected the growing generation on the farms. Thank your lucky stars if your sons believe in the Glorious Future of Agriculture.

Even now the winds of unrest are carrying multitudes from the homeland to the big town. Ten thousand lads, ripe for vigorous country manhood, are responding to the distant glitter that will prove a mirage. An army of boys, forsaking their heritage, are being lost forever to agriculture. In that hopeful journeying to the crowded cities is a national tragedy; for the sake of the nation, and for the sake of the boys themselves, *it must be stopped.*

What will you do?

Give the young energies and ambitions of your sons the necessary leeway. Give them opportunity at home, give them machines and responsibilities, and time for enjoyment. Make them see behind the false mask of the city, and teach them this Truth: *health, wealth, and happiness are far more certain to be found on the farm.*

INTERNATIONAL HARVESTER COMPANY

OF AMERICA
CHICAGO (INCORPORATED) USA

92 Branch Houses in the United States

Some Things That City People Think They Know

[CONTINUED FROM PAGE 5]

than has the highest skill of the farmer; nor does he know enough of economics to know that in general the higher the yield the greater the cost per bushel, and that, aside from what the season can do gratis, bumper crops are economically possible only in periods of high prices.

Cast in other terms, he does not know that until recently prices have been so low as to prevent high yields.

Europe and America Compared

When the critic of the American farmer gets really warmed up at his job he quotes European yields, and he always chooses *wheat*.

Some of us know that, climatically, northern and western Europe are better suited to high yields of wheat than is America. That is the main reason why we raise 90 per cent of the corn crop of the world, while *they are unable to grow it at all.*

If our friend the critic would choose *corn*, to which our climate and soil are especially adapted, he would learn that America leads the world, not only in gross output but also in *acre yields*. Truly, this would be as unfair to Europe as are comparative wheat yields to us, and neither throws conclusive evidence upon the question of relative farming ability.

Of course an impartial study will show conclusively that, in general, Europe does produce more per acre than we do. But it is not because of their superior knowledge or skill. It is because food is higher in price there than here, and *labor is not only more abundant but also cheaper.* They produce more per acre in China than we do, and wages are ten cents a day. Is that what our critics want?

The fact is that while there are all kinds of farmers in America, both good, bad, and indifferent, and while the land will support a higher degree of incompetence than will any other kind of big business, yet it is also true that when speaking of farmers in general as *producers* it is not too much to say that they understand their business about as well as do the men of any other profession, and they are working about as faithfully at their job.

Work It Out Together

What is needed now is a better connection between the producing end, which is the farm, and the selling end, which is in the hands of the distributors. Of the evils of distribution and the methods for their correction the writer is not much informed, but it requires no economic specialist to see that the weakest spot in farming is not in underproduction, or even in uneconomic underproduction, but it lies in the failure of farmers to effect organizations able to put the produce into the channels of trade to the best advantage, not only to the farmer, but to the consumer as well.

That is why some of us hope much from the new form of farmers' organization, the farm bureau, and that is why big business should co-operate in every way possible in helping to find the best solution for handling as well as producing the greatest of all world commodities—food.

And these problems will be best and most rapidly solved if the general public will substitute real helpfulness for some of the criticism, which, after all, proceeds not from knowledge of the facts, but from irritation at unaccustomed high prices. It is perfectly clear that agriculture is entering upon a new era, not only in farm practice, but also in business organization. The time has passed when the farm is to be considered as on the defensive, and when agriculture is in any sense an apology. It is rapidly becoming a very great national and international business, as well as a respected mode of life.

All Purebreds!

THE members of the Salem County, New Jersey, Cow-Testing Association have a record that is hard to beat. Each member is an owner of a purebred bull, and is feeding balanced rations. Six men have started official testing, three unofficial, and nine more are breeding their cows to do official work another season. One member made two 30-pound records this past winter. And, among other things, a Holstein-Friesian club and a bull association have been organized, and a community-testing barn established.

A Beautiful Wrist Watch

Any Girl or Woman Can Easily Earn It

HERE is your chance to get a splendid wrist watch—one that you will be proud and happy to own. The illustration shows the exact size of the watch but cannot do justice to its daintiness. In fact, this very style of watch is now quite the rage in the cities. Each watch now comes with a black satin ribbon (the suede strap shown in illustration having been discontinued), and is neatly packed in an attractive box when it reaches you. You will surely be delighted with it. Hundreds of girls and women who have earned them cannot praise them too highly. It will be a real surprise to you when you learn how easily you can make one your very own. Just mail the coupon and see for yourself.



FARM AND FIRESIDE

FF July

Reward Dept., Springfield, Ohio

Please send me full information about earning a Wrist Watch.

Name _____ R. F. D. _____

Postoffice _____ State _____

Clip and Mail
this
Coupon
TO-DAY

Heavily
Nicked Case
Stem wind
and stem set
Keeps
good time

He Was Poor

[CONTINUED FROM PAGE 8]

in buying show animals with which to establish a breeding herd.

From the foregoing it is apparent that Hill is a good cattle breeder, and knows the details of his business. But he has not been content with the influence that Herefords have had in his own barnyard; he has tried to extend that influence to the countryside.

Just to awaken the interest of a good steer feeder in purebreds, Jim Hill gave this farmer the opportunity of feeding Hereford heifers intended for the next spring sale. Hill charged the heifers to the feeder at 10 cents per pound, and weighed them back at 15 cents. They made very satisfactory gains, and proved a financial success to the feeder. But the big point in this farmer's feeding experience was the fact that when he weighed those heifers out of the feed lot he believed in them so thoroughly that he bought a foundation herd. He is now an enthusiastic breeder, and is making good.

Another good steer feeder had been feeding rather plain cattle. Hill tried to convince him that he should feed steers that were of better quality, and of the breed of the community's choice. The result of the discussion was the arrival in the county of a load of white-faces that waxed fat, and then won first prize as a carload lot at the 1919 Buffalo Stock Show. The Hardin County Fair Board decided to stage a boys' steer-feeding contest. Hill convinced them that the boys should feed steers of the popular breed in that particular county.

These are just a few samples of the methods of Jim Hill in selling Hardin County with Herefords. And as the farmers' faith has increased, they have opened their purse strings, and bought still more cattle, so the selling campaign has really proved a success.

IN ADDITION, this community is now enjoying the patronage of buyers who know that there is now a large number of herds from which to make a selection. The selling of large numbers of bulls, which is generally quite a problem, has been solved by making up car lots of bulls suitable for the range, and consigning them to a buyer in the West. Each season the bull crop is cleaned up in this manner.

Notwithstanding Hill's general interest in the cattle breeders of the community, he shows an unusual preference for one young breeder, ten-year-old James Hill, Jr. Each year this lad selects a heifer, which he feeds, fits, and sells at the annual sale as a yearling. Jimmie's last heifer brought \$1,020 which is part of a fund to send the lad through the state agricultural college. Jimmie believes in purebreds, and appreciates the difference between a Fairfax and a Beau Brummel.

It's pretty hard to say just when a man has made good. But in driving the pikes of Hardin County, seeing the red-robed white-faces contented in the blue grass, or in talking with optimistic breeders who are happy with their cattle and their kin, one is convinced that the man who dared to hope and plan for all of this has in a measure made good.

In closing, let me suggest that, if you want to get started in money-making purebreds, you go to your county agent and your banker and talk it over with them. Between you, you can make a good job of it, no matter whether you are poor or not.

Labor Economies You Can Practice

ONE man with a 28-inch horse-drawn plow can accomplish 70 to 80 per cent more work than with a single-bottom plow.

"One with a 28-inch plow drawn by a tractor can cover 30 to 35 per cent more ground in a day than with six horses on a horse-drawn plow of the same size.

"A man with a two-row corn cultivator, when it is practical to use one, can cover twice as much ground in a day than he can with a one-row machine.

"A corn binder is 50 per cent more efficient than man labor. A hay loader increases efficiency 25 per cent compared to man power."

These are a few of the answers received by the Office of Farm Management, U. S. Department of Agriculture, in reply to 600 questionnaires sent out to farmers of central Illinois asking how they saved farm labor.

It Has the Strength To Stand Every Strain

DISKING is a big strain on any harrow. And the better the disking the bigger the strain. Even though the harrow must pass over ridges, down into dead furrows and hog wallows, through corn stubble and over hard, lumpy ground, you want to set the discs at the right angle to pulverize properly. That means a strain on main and gang frames. Get a harrow that will stand the strain of doing good work year after year regardless of field conditions.

JOHN DEERE PONY TRACTOR DISC HARROW

This harrow is strong—the gang frames are double bar, securely riveted, with solid steel cross plates and steel end ties. The frames are so strong that they can be weighted down, and they do not warp or twist when the scrapers are used.

There is no springing of main frame of this harrow—the front gangs always come together in the middle, thus taking the end-thrust on the bumpers instead of on the frame.

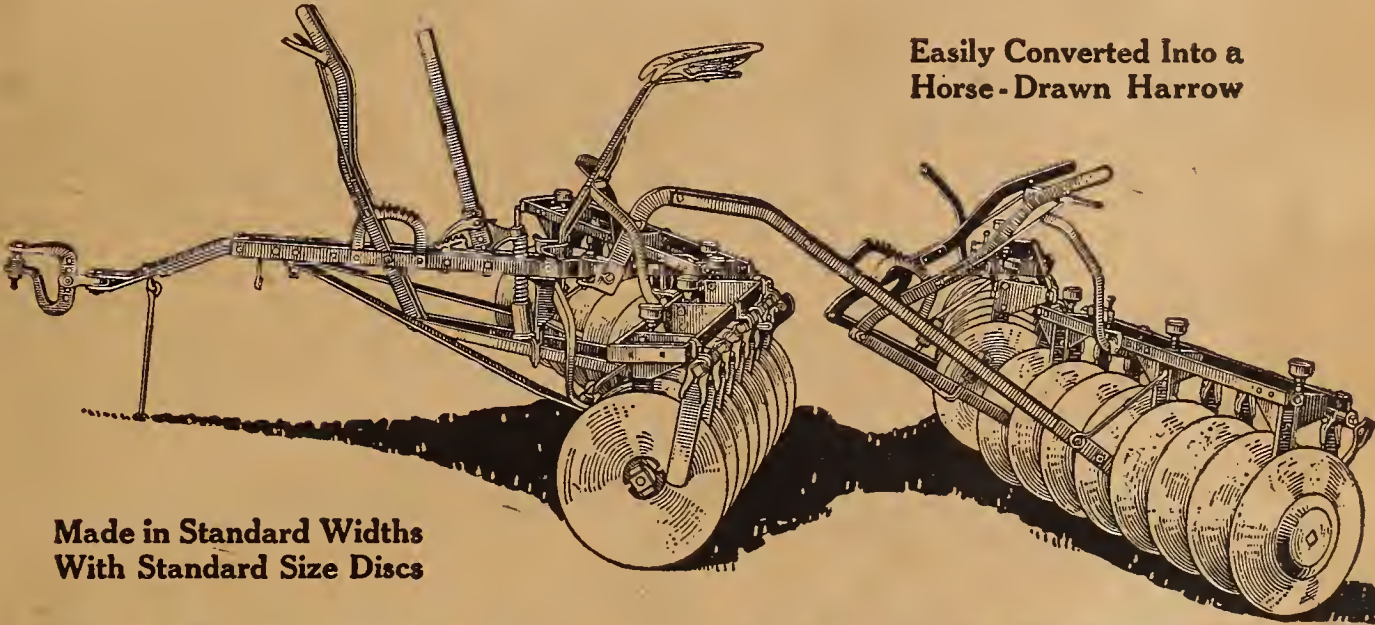
The harrow penetrates and pulverizes as desired because the low tractor hitch and low

coupling between front and rear gangs hold discs to their work.

Light running, with no dragging around corners—the rear gangs trail properly and run steady because the reinforced gooseneck connection is attached ahead of the front gangs.

Can be used with any standard tractor—the hitch is adjustable.

Write today for this Free Book, "Bigger Crops From Better Seed Beds"—32 pages of information valuable to every farmer. Address John Deere, Moline, Ill., and ask for booklet PT-48.



Easily Converted Into a Horse-Drawn Harrow

Made in Standard Widths With Standard Size Discs

JOHN DEERE

THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

150-Acre Farm With 2 Horses, 16 Cattle and
Brood sow, poultry, wagons, machinery, cream separator, tools, stove wood; splendid community, near town, beautiful lake; machine-worked fields cut 50 tons hay; 20-cow spring-watered pasture, valuable wood, 400 sugar maples; 8-room house, spring water, maple shade; big basement barn, silo, other fine buildings; owner called away. \$5,000 takes all, easy terms. Details page 14 Strout's Catalog Farm Bargains 33 States, copy free. STROUT FARM AGENCY, 150 D P, Nassau Street, New York City.

INSYDE TYRES
—genuine inner armor for auto tires. Double mileage; prevent punctures and blowouts. Easily applied without tools. Distributors wanted. Details free.
American Accessories Co., Dept. 203, Cincinnati, Ohio

GOOD FARM LANDS
In Michigan's best hardwood counties, good for grains, fruit, stock. 10 to 80 acres. \$15 to \$35 per acre. Easy monthly terms on a farm home. Booklet free. Swigart Land Company, 1250 First Nat'l Bank Bldg., Chicago, Ill.

The PERFECT CORN HARVESTER
Sold Direct \$23.50 JUST THE THING FOR SHOCK OR SILO CUTTING

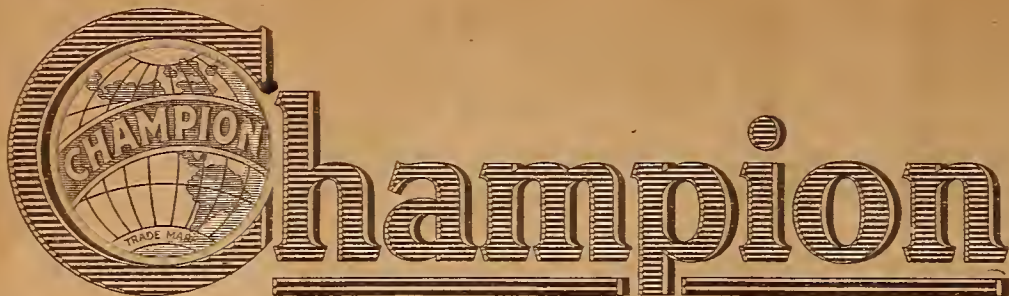
Works in any kind of soil. Cuts stalks, doesn't pull like other cutters. Absolutely no danger.
Cuts Four to Seven Acres a day with one man and one horse. Here is what one farmer says:
Dear Sirs:—Used your Corn Harvester this season. It does better work in large corn than in small corn. I cut 68 shocks, 12 hills square, and did my chores morning and evenings. The soil was black and loose and the Harvester did not seem a load for a light horse.
Yours truly, W. T. MACK, Marion, O.
SOLD DIRECT TO THE FARMER
Send for booklet and circulars telling all about this labor-saving machine; also testimonials of many users.
LOVE MANUFACTURING COMPANY
Dept. 11 Lincoln, Illinois

WATER!
All You Want—When You Want It
Don't depend upon wind to pump your water. Let Galloway pump outfits supply all the water you want exactly when you want it. The Galloway frees you from back-breaking pumping work; makes you independent of the weather. Give your stock lots of water during the hot weather. It keeps them in good condition. Galloway gives more than the rated horsepower, and lasts longer than the ordinary engine. Powerful 2 1/2 H. P. Engine runs pumps, cream separators, washing machines singly or together. All small machines—or 22 in. circular saw. Self-rolling, double-gear pump jack. Best four-ply belting. Satisfaction guaranteed.

MASTERPIECE SEVEN
Galloway's great masterpiece Engine that gives seven horse power for the price of six. The best all around power plant for the farm. Write for low price and descriptive literature.

Galloway's Pumping Outfit
2 1/2 H. P. Engine—No. 4 Heavy Duty Pump Jack, 16 ft. 2 in. Belting, Webster Magnet, F. O. B. Nearest Shipping Point, Complete
\$81.40

Galloway's Complete Pumping Outfit
Direct from Factory—Easy Payments
Shipped direct from the factory on Galloway's factory to farm plan. The saving goes into your own pocket. You have your choice of five easy buying plans—cash, bank deposit, half cash-half note, full note, or installment. Select the plan which suits you best. 30 days' trial.
Write Today for full details. Order direct from this ad and get prompt delivery. Shipped from close-by points.
MONEY REFUNDED IF NOT SATISFIED.
WILLIAM GALLOWAY, President
The William Galloway Co.
395 Galloway Station, WATERLOO, IOWA



You Have Never Tried This of Course

BUT give Champion No. 3450 Insulator this test and you will find that it can be successfully driven into a solid bar of lead without injury.

Our No. 3450 Insulator, the foundation of all genuine Champion Spark Plugs, will stand abnormal conditions far more severe than those in ordinary usage.

Champion dependability accounts for the fact that Champion Spark Plugs have been adopted as standard equipment by more manufacturers than any other spark plug.

There is a Champion Spark Plug for every type of motor car, truck, tractor, motorcycle and stationary engine. Order a set from your dealer today.

Be sure the name Champion is on the Insulator and the World Trade Mark on the Box

Champion Spark Plug Co.

Toledo, Ohio

Champion Spark Plug Company, of Canada, Limited, Windsor, Ontario

**DEPENDABLE
SPARK PLUGS**

The Judge

[CONTINUED FROM PAGE 26]

much to say. He just loved her—that was all. She thrilled with the sense of overwhelming impetuosity underneath his halting declaration. His eyes, stern with deadly seriousness, drank her in, as she sat before him on her horse, the setting sun on her face. She drew her horse back and shook her head slowly.

"I don't know, Mr. Cawthorn."

He smiled his grim, boyish smile.

"Anyway I'm glad you didn't say this was sudden."

"But really it is, isn't it?"

"Perhaps—as time goes. But you see I'm leaving to-morrow for South America."

"Oh—then of course you had to—I—I like you," she confessed flushing scarlet. "But the other—you want me to be frank, don't you? I'm very sorry. I can't give you any answer."

"Nor hope?"

She was looking him straight in the face now. She saw his jaw harden. She thought she had for a moment a glimpse of the face that commanded men. Then he smiled.

"Very well," he said gently, and added as if to himself, "South America's not so far off."

THEY rode back side by side in constrained silence. He had not the assurance to chat as Burlingame had chatted. The sunset faded. The house of her fathers came into view, twinkling with lights, the columns and chimneys painted white by the rising moon. They loitered up the avenue. For some reason she was sorry this ride was over.

No negro had come to take out the horses. Standing in the shadow of one of the portico columns she saw Cawthorn lead them around toward the barn. She had to smother a quick impulse to go help him unsaddle. Steve Earle met her in the hall. Steve's eyes were twinkling.

"Stella," he whispered, "if you can't choose between them you might do as your father would have done—let Frank decide."

She ran up-stairs and dressed hurriedly. "Who are you?" she asked her reflection in the mirror. "I never saw you before!" At supper a strange excitement seized her. Without her conscious volition she was chatting meaninglessly and continuously, and everybody was listening. They all had divining eyes to-night. She knew her cheeks were burning as she danced in the parlor—with Burlingame most of the time. She hurried into the hall to tell the departing guests good-by. Most of them were leaving on the midnight train. Cawthorn was there in his overcoat.

"You're not going, are you?" she asked breathlessly.

"No, you're not rid of me yet," he smiled. "Steve takes one party, I another."

She returned to find the house strangely vacant. Marian was disappearing up-stairs with a college friend who would leave in the morning. The hall was dimly lighted. The fires burned deserted in the rooms. Burlingame came out of the parlor and met her at the foot of the staircase. Before she could resist he had taken both her hands.

"What about my answer?"

SHE drew back. Burlingame's eyes were taking too much for granted. But his next speech made amends.

"I want you, Stella. I can make you happy. I can give you everything that's your due." His eyes were searching her face. "I must leave to-morrow. I'm going abroad. I can't come back for a while. Stella, I must have you!"

"To-morrow?" she interrupted. "There'll be time then, won't there?"

"That depends. Come, I'm used to settling things for people. Let me settle—"

Her head went proudly up. Then she softened at the disappointment on his face. Things had always gone his way. She had no right to put him off.

"I'll tell you to-morrow," she smiled.

She ran up-stairs and closed her door with a sigh of relief. There was no light but the lurching fireglow. She smiled when Frank, dozing before the fire, lifted his head and looked at her. He seemed so solid, so wise, so sympathetic, so judiciously grave and solemn. His presence steadied her. She sat down, the points of her white slippers touching his back. She leaned over his body and stirred the fire. She heard Marian go down-stairs. The house grew oppressively silent. Time had come to think soberly. They were both going

This Boy Is a Live Wire. Are You?



This is Charley Johnson. He hails from Allegheny County, Pa. Charley is like a good many other boys we know; when he sets his mind on getting a thing, he doesn't sit back and wait for it to come to him. He goes out and hustles for it. That's just what he did when he found out about our Hamilton Rifle offer not so long ago. The picture above shows he didn't lose any time getting busy. Looks as though he's all set for a hunting trip, doesn't it? Charley was nice enough to send us his picture and tell us how overjoyed he is with his

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to-morrow. She had always thought it would be a simple question, and now—
“Positively,” she frowned, “I can’t say yes to both of them!”
Frank tapped the floor with his tail.
“You may think it’s funny, old man; but I don’t!”
She sat silent for a long time, her hands clasped over her knees, her eyes on the glowing knob of one of the brass andirons.
“I must be in love,”—she shook her head slowly,—“I have the leading symptoms. Oh, if Dad were only here!”
Frank rose to his feet and looked earnestly into her flushed face. He knew it wasn’t funny. He knew she was worried—he saw the wistfulness in her eyes. He must let her know he understood. He laid his silken red head like an offering on her silken white lap.
“I could help a man,” she mused, with a rush of generous blood to her heart. “Oh, with the right one I would go to the ends of the world!”
She looked into Frank’s eloquent eyes.
“If you weren’t here, old man, I’d cry. I think maybe I will anyhow.”

SHE was startled by the single stroke of the clock on the stairs. The day was here in which she had promised Burlingame an answer. Somebody had come into the hall. She rose and opened her door softly. It was Cawthorn. He was speaking to Burlingame in the parlor. Both men were crossing the hall.
“Train’s late,” Cawthorn was saying. “Steve won’t be in for an hour.”
“Shall we sit up for him?” Burlingame’s voice was sharper, more precise than Cawthorn’s.
“Sure. We’ll keep a good fire for him. It’s devilish cold.”
She leaned against the door-facing. They were there, in the living-room, together. Frank stood before her, waiting. She caught her breath.
“I know what Dad would do.”
Frank’s tail was wagging quickly. He began to pant as if it were hot. Something was the matter. He felt as he used to feel when he was a puppy, and children played hide and seek, pulling him into dark, secret places, peering out over him with bright eyes. He opened his mouth to bark.
“No!” she whispered. “No!”
He could stand it no longer. He reared gently up, his paws on her throbbing white shoulders. He wanted to help. It was in his glowing eyes, this yearning a dog forever feels, and must forever smother in his dumbness. She caught his head convulsively between her hands.
“Dad would do it!” she breathed.
“Dad says you know! I believe you know! Oh, Frank, don’t make a mistake!”
It was dark in the upper hall. She was clinging to his mane. Could she be frightened? One night when his master was away his mistress had made him go through every room in the house, while she followed white-faced with a lamp and a pistol. That had been the proudest night of his life.
And now, in this dark, silent hall, he pricked his ears sternly, he looked angrily down the dim staircase, a slight menacing snort rattled his chops. Must he rush down there? He had powerful fangs. He could jump into a man’s throat. He looked up at her eagerly. She smiled and shook her head.

HALFWAY down the stairs she stopped. Through an open door he could see into the living-room. There was a light on the mantel. Fire burned in the fireplace. The man they called Burlingame was leaning forward in a chair talking. The man they called Cawthorn was sitting opposite, smoking a pipe, listening.
What now? She had told him something back there in her room. His ears drooped with dismay. What was it? He glanced up into her face.
“Go!” the girl whispered.
He understood that. “Go!” and “Come!” and “Old Frank!” and “Careful!” and “Dead Bird!” and “Fetch!”—of all human speech he understood only such words as these. But could she mean it? She who had never driven him from her?
“Go!”
Humbly obedient he went down the stairs. Below in the hall he looked up. With a hunting gesture she waved him on, into the room where sat those two men. Again she smiled and shook her head. This was not so simple a matter as jumping into a man’s throat. She just wanted him to go in there—that was all. It was not for him to question why. Into the living-room he stalked proudly.
“Come here!” ordered Burlingame.

Frank threw his head up. The reserve of middle age had taken the place of the tumultuous friendliness of his puppyhood. Now and then his heart went out to some rare being like this girl out there in the hall. Toward other visitors he was courteously aloof. But Burlingame was a fine shot, and had a right to order him. With pricked ears he scrutinized Burlingame’s face. There was command in those dark eyes and in that firm mouth.
“Come here!” ordered Burlingame again.
The dog’s tail began to wag. He stood halfway between the two men, the lamp-light glinting on his long powerful back. He shifted his fine eyes from Burlingame’s face to the face of the other man. Cawthorn was leaning forward, his elbows on his knees. The bowl of his pipe was held in a strong, sunburned hand. He was looking straight at the dog. He was smiling whimsically. He said never a word.
What was it made the dog’s ears suddenly droop? Something he had seen in those deep-set gray eyes before—something out of the past that thrilled him. In danger the man Cawthorn would fight for his dog. In starvation he would share his last crust. Men with eyes like that always had, they always would. Frank forgot the man Burlingame. For a moment he even forgot the girl on the steps. Humbly, with wagging tail, he went forward.
He had keen ears. He heard a little sound in the hall. Alert, he glanced that way. He had eyes that could pierce darkness. Besides, she was dressed in radiant white. Frank looked up into Cawthorn’s face. The man must be blind that he didn’t see her too. He pulled loose from Cawthorn’s hand. If she had not ordered him not to, he would bark with joy. He ran into the hall. She had vanished like a spirit. He took the stairs three at a bound. She was standing in the middle of her room—crying frankly.
The knowledge of human speech nature had denied him, but the emotions of those he loved were to him an open book. Her tears could not deceive him. She was happy. He must have pleased her. He stood before her, his ears thrown back, his grateful eyes raised to her radiant face.
“Oh!” It was a sobbing little laugh. She was smiling down at him through sparkling tears. “Why didn’t I know it before? You—you impossible thing!”
[THE END]

Why Smokes Are High
NEARLY 29,000,000 pounds of tobacco was used in this country in 1790, according to the first statistics compiled by the U. S. Department of Agriculture on tobacco consumption.
These figures must have sounded mighty big to our ancestors of that age, but what would they say if they heard that, in 1918, 828,000,000 pounds were consumed, and that 1,000,000,000 pounds of the “weed” were used in 1917? The per-capita consumption of tobacco has been steadily gaining since 1865.

To Every Farmer’s Son Who Wants to Quit
[CONTINUED FROM PAGE 15]

job—to go home, not to strive to see how much money you can possibly amass, but to strive to learn how to bring to farms sufficient profits so that they will be businesslike institutions, with homes on them comfortable, and so planned as to make civilized life possible, with books and open fire and bath and pictures, with flowers and fruit about the homes; then that you shall manage to find that difficult but not impossible thing, a balance in life, so that you will work with your hands effectually enough, and not too much, you will leave a residue of vital energy for the real business of living, for reading, for thinking, for companionship, for joy and happiness upon your farm.
In closing I want to say just one word to the parents of the boy who reads this: If you want to interest your son in staying on the farm, give him an interest in the place. Give him a piece of land, or a little stock or something he can call his own and care for and sell, and have the profit and the increase therefrom.
Better still, take him into partnership with you. Treat him as an equal, and talk things over with him. This, and a good education, will usually make any farm boy want to keep right on being a farmer.
And, incidentally, Mother can accomplish wonders with the girls by doing the same with them.

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Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

A LOT of people have been, and some still are, worried about the Non-Partisan League. They felt that it was going to sweep the farmers of America into rampant, rip-snorting radicalism. Perhaps the league leaders thought it themselves.

But not so. People don't change the habits and principles of generations at the beck and call of a promising label so easily as that. There are always some who are willing, without thinking much about it, to take a chance on anything that merely mouths the promise of better things. And there are others, slightly more conservative, who will follow what they see others doing.

You can stampede a herd of cattle with the rustle of a newspaper, and they will run themselves ragged if they're not stopped. You can see sheep fooling themselves day after day by racing after what looks like better grass on the next slope. These poor brutes never learn any better because they never think, and do not apply the acid test as between the promise and the performance.

Thinking time is about here for the Non-Partisan League. The thing is falling to pieces because it is not built on sound principles. Its ruins will still be observable for years to come, but as a going concern it is already dead.

Of this there is ample evidence, but from the mass we will quote only one piece, from the New York "Evening Post":

"FARMER'S POLITICS.—OUTLOOK FOR THE RADICAL MOVEMENT IN A WESTERN STATE.

"Lincoln, Neb.—One development in politics which is proving encouraging to business men of the interior is the fact that the Non-Partisan League is not showing the gains threatened a year ago. While there is more or less boasting about its inroads in this State and Kansas, the fact is that there is little enthusiasm for the radical movement on the part of the farmers. The record of North Dakota in raising taxes has been well spread through the country, and some of those who last year yielded to the traveling agents and put up their \$16 are backsliding.

"New members are hard to get. The farmer has, from his experience with radical labor movements during harvest, and the difficulty of securing workers at any time, even at exorbitant wages, lost his enthusiasm for upsetting things. He is demanding a businesslike administration, and is thinking more of getting his products to market and reducing taxes than of organizing for politics.

"The co-operative movement in marketing grain through farmers' unions, and in buying some staples, such as binding twine, by the same method, is increasing, however. Co-operative stores are growing in number in the rural communities, and generally do a large business. One such organization with three elevators did more than a million dollars' worth of business last year."

Meaning What?

A Pennsylvania farmer in returning his census schedule to the government gave no crop facts, but added this explanation:

"The population near and about my farm has a tendency to relieve the owner of the labor of gathering his own crops. This altruistic impulse is so predominant

that I have refrained from planting anything for the last twenty years. I am just now turning about 40 acres into a cemetery, and hope to fill it soon."

What with, may we ask? The bodies of those who have starved to death waiting for him to plant something they could steal?

Not the Answer

A first-class farmer of my acquaintance wrote me the other day about what he thinks he and his fellow farmers have got to do to be saved.

I agree with him as far as he goes. But he doesn't go far enough. Here is what he says:

"We are the only producers who say to the buyer: 'What will you give me for this stuff?' and then take what the buyer offers. We sell this way because we don't know what it costs us to make each crop. Most of us are selling our own time and experience for less than Henry Ford pays unskilled labor, and to Henry's unskilled laborer, in the shape of milk, bread, and ham, we give the labor hours of ourselves, our wives, and our children. In the mean-

time his children are earning in cash from \$12 to \$40 in offices and factories, and we pay their wages when we buy manufactured goods.

"We've got to keep books, and we've got to see that all our neighbors do it, so we won't be trying to meet prices which are less than our cost of production.

"Our crops have got to cover the mortgage, show us a fair return on our own invested capital, cover depreciation, pay the help, and pay us over and above more than \$2,000 a year for our own labor and supervision. If we don't make that much, we ought to quit farming, move to town, take a home near schools and churches, with running water and electric light, get a job as motorman, milk-wagon driver, plumber, or

carpenter at \$2,000, with no risks of crop failure, diseases of stock and the rest—just work for \$50 a week, with Saturday afternoons and Sundays off.

"Let's organize our business so that we can make a living—a 1920 living out of it. It's the basic business of the nation, on which all other businesses depend, and as such should yield us for a fair year's work a modern home, schooling of the best for the kids, and household conveniences for the wife. Let's begin this organization by putting in a system of bookkeeping that will show us our costs.

"The consumer will have to pay us what it costs to raise his food. When we fix it so he does, he will hustle around, and cut out some of the middlemen, not those who handle, but those who gamble.

"This move will in itself drive thousands of men into production, and relieve the labor situation.

"If we are to be able to name our prices, we must be sure of our market; we must know what the demand is going to be. That is what other producers do. We must also provide our own storage facilities to carry products over so that we don't all have to sell at the same time. In this way we will do what middlemen have done—get a profit out of it, and save the consumer money besides.

"We forget sometimes, when we grumble about the packers and the middlemen and implement manufacturers as if they were persons with tremendous power, that they are nothing but corporations, and that we farmers individually have such great resources that we too can organize strong distributing corporations, if we will but take the initiative.

"The federal and state departments of agriculture, our farm bureaus, county agents, and our banks can help us put our farms and finances on a business basis.

"Let's not forget the banks. The prosperity of our bank depends entirely upon the prosperity of our community. If we get the banker to see that we are in earnest, and are really out to make ourselves business men, and our farms, cold-storage plants, slaughter houses, etc., profitable businesses, he will give us the benefit of his business training, and together we will all

FARM AND FIRESIDE

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You are invited to ask questions of any or all of these people in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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If you are wondering about California's grape crop's fate since prohibition came in, wonder no more—for it is going to be dehydrated and shipped to Europe. This picture was taken by F. E. Webb of Watsonville, California, R. F. D. No. 1, on the ranch of L. Webb in the Pajaro Valley. The young lady is Annie Rose, one of the pretty daughters of a Portuguese farmer who helps Mr. Webb in the fruit season



Being a subscriber to Farm and Fireside, and being interested in it and the pictures that are in every copy, I am sending you a picture of my dog, Jack, holding a copy of Farm and Fireside, which I have given the title "Even the Dogs Like Farm and Fireside."—William Hewitt, R. F. D. No. 4, Columbus, Kansas

bring farming up where it rightly belongs.

"And by the way of tonic for the labor conditions that face us this year, let's remember that every hand that leaves the farm for a city job must be fed by our work. He goes to town to get \$6 or \$10 a day, and he has got the money to pay us a fair price for our work and interest on our investment. He will, too, if we insist; but he will gladly pay us less if we let him.—Q. R."

You are right, Q. R., we have got to develop co-operative marketing, know production costs, stop food gambling, eliminate unnecessary middlemen, and do everything else we can to cut down the spread between the price to us and the price to the consumer.

But after all that has been done, there is another factor that steps in to set prices for us, regardless of our cost of production in the United States. That is the influence of world wholesale market prices, which are controlled not by our supply and demand, but by world supply and demand.

I mean by that that if you must get \$2.40 a bushel to grow wheat at a profit, and Argentine or Australia or Russia, with cheaper labor and lower production cost, can put the same quality of wheat into this market at \$1.50 and make a profit on it, the grain dealers will naturally buy the cheaper wheat, and you will have to sell at what to you is a losing figure, or keep your wheat. This holds true of butter, meat, and other products; and that is a situation that also must be met if you and I are to prosper as farmers. And it requires international equalization of production and marketing, careful study and working out of tonnage rates on ocean shipping, and a host of other complicated matters that can be adequately dealt with only by such agencies as the Farm Bureau Federation, the American Government itself, or the International Institute of Agriculture at Rome.

A Drop of Water

Enough of heavy thinking for this time. Let's wind up with something light. A drop of water, for instance.

Did you know that when a drop of water reaches the ocean it is destined to remain there 3,460 years? That's the average. Some drops may be drawn out by evaporation the next day. Some drops may wander about in the ocean 10,000 years. But the average is 3,460 years.

All this has been figured out by scientists who have made a careful estimate of the total volume of water that goes into the ocean every year. They declare that one three thousand four hundred and sixtieth of all the water in the world goes into the sea every year.

The life of a drop of water once out of the ocean is apparently a merry and a busy one, for, after evaporation, it will become condensed into water again in about ten days, and it will not be many years before it will have found its way back to the ocean again, either by means of rivers or by evaporation, and then by means of rain from the Great Lakes or some such place.

But wherever the drop of water lands on earth it is not long before one of three things happens—it falls to earth and gets back to the ocean by subterranean passages, it falls into a river and flows back to the ocean, or it falls into a lake and is either evaporated into the clouds or finally gets into a river.

Useless information, of course, but it is interesting—isn't it?

George Martin

The Hoover lifts the rug from the floor, like this—flutters it upon a cushion of air, gently "beats" out its embedded grit, and so prolongs its life



Pride in the appearance of one's home properly must include the rugs. And like all other beautiful things, rugs respond to frequent and right care with a longer lifetime of beauty. Three processes—beating, sweeping and suction-cleaning—are vital to such care. Only The Hoover combines the three. It beats out the embedded grit. It sweeps up the stubbornest clinging litter. It suctions away the loosened dirt. And it is the largest selling electric cleaner in the world.

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That Good-for-Nothing Grant Family

[CONTINUED FROM PAGE 18]



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the girls, she drew a long breath and looked wistful.

"They didn't teach girls such things as bread-making in school when I was young," she said. "I wish they had. I always worked outdoors when I was a young one, and I didn't know how to cook at all when I married. I wish I had."

I sensed in the droop of her shoulders as she spoke, and a certain cringing look in her eyes—the tragedy of those years when the young wife could not cook and Grant suffered disillusionment and dyspepsia.

When all the plots were checked up and all the returns in, Charles Grant's yield of 108½ bushels was 2¼ bushels above any other.

I DROVE out to bear the news personally. I wanted to see how they would react to a large dose of good luck.

Charles just stood and stared, his eyes growing rounder and rounder, and a slow grin parting his lips until they disclosed the place where a tooth had recently been.

Mrs. Grant looked wild for a moment, began to laugh weakly as she exclaimed, "Why, Charlie, isn't—" and then broke into sobs, and left the room.

Mr. Grant was so proud he strutted, and, as usual, had something to say.

"Well, sir, I knew all along that Charlie had some awful good corn growin' there in that patch. Of course, it isn't quite as good as mine—that wasn't to be expected of a boy—but it was good. I tell you, I am a great believer in using good seed—I always was. If Charlie hadn't planted good seed he never could of done that, never. And all the cultivatin' he done—that helped a lot. I kept tellin' him all the time to keep up that cultivatin'. Stirrin' the ground keeps it moist underneath you know. I am awful glad that Charlie and me got that white dent corn, too, for I

knew there ain't any other kind that would have yielded 108½ bushels. That there is a great corn for this country."

And so he ran on. Charles and I faded off into the background, and gave him the "close-up" as he paced back and forth and aired the theories he had always held, but never practiced, regarding corn culture. I was glad to give him the foreground, and wanted him to make the most of it in his own eyes, for I knew this was a great moment in the history of the Grants.

Of course, the twenty-dollar prize was not the only award for the young corn grower. There was an exhibition at the county fair where he again took a prize, and Mrs. Grant also won a premium on her dozen eggs which she took.

Then there was the wonderful event of getting the exhibit off to the state corn show, where it received recognition. And now he is selling seed corn, and it will bring more money than the boy ever saw before.

CHARLES' eyes are still soft and appealing, but now they have a luster and animation. He is thoroughly awake. Mr. Grant is talking with new dignity about "since I went into the seed-corn business," and is laying consistent and workable plans for next year's work. And he is going to succeed. There is no reason why he should not do a good business on his river farm. Mrs. Grant looked ten years younger, and as I think it over I strongly suspect that she was wearing a new hat when I saw her the other day. I know she dropped a word about the newly organized Mothers' Club meeting with her.

The Grants are one of my best pieces of work in this county. How shall I write them into my report?

Such vain, useless, and lifeless things are reports!

When You Make Your Farm Look Better

[CONTINUED FROM PAGE 20]

from the farm wood lot or in neighborhood groves, this is a process that takes much time and some skill. It is wiser to start growing the skeleton of the plan by buying some trees and shrubs from a reliable nursery and fill out the skeleton at your leisure. When ordering the planting materials for the home-grounds picture these few suggestions may be kept in mind.

TREES which lose their leaves in winter are usually sold by their height, up to 10 feet, larger trees by the diameter of the trunk near the base. It usually does not pay to buy a tree less than 1½ inches in diameter, but much larger trees can be transplanted if the cost is not too prohibitive. Some nurseries will plant a five-inch elm within 50 miles of their nursery for \$15. Good two-inch elms can be obtained in quantities of five or more for \$1.75 to \$2.25 each. Evergreens are usually sold by their height and spread.

Shrubs are also sold according to their height. Shrubs two to three feet high are a good size to plant. They should have good bushy tops and an equally bushy and well-branched root system. Mere whips are never acceptable. Buy direct from a reliable nursery firm, for if sold through agents stock must be sold for much higher prices. It is well to buy in quantities of five or more of one variety; in this way one can secure a better price. When bought at the

rate of ten, shrubs should generally not exceed 25 to 35 cents each.

Do not order all of one kind, nor is it wise to order more than 10 or 15 varieties for home grounds of the average size. Before you order, study the habits and nature of the shrubs you intend to buy; then order the variety best suited to your needs. Do not allow substitutions of other varieties in your order, unless it is acceptable and authorized by you in writing. Do not take seriously all you read or hear about some plants being "distinct and fine," "marvelously effective," "the best ever." These are but stock phrases to catch the attention of the beginner. Avoid buying novel, gaudy plants, for they seem out of place on the average home grounds.

THE home-grounds picture must be simple to be beautiful. Each object must be harmonious with the general plan, for "the beauty of the whole is greater than the beauty of any part." There must be a logical and orderly arrangement of the useful features, and the planting materials must be in harmony with other features of the landscape. Do not neglect the plants we call common. The common elder, sumac, blackhaw, thorn apple, and crabapple are more beautiful in the average home grounds than many of the foreign shrubs. Plant permanent long-lived trees and shrubs which will be a credit to your efforts.



A small farm cottage made beautiful with shrubs and flowers

FARM & FIRESIDE

The National Farm Magazine

AUGUST 1920

5¢ A COPY



Farm Loans Halted! Why? — See page 5

Barrett Everlastic Roofings



Roofings of Known Quality

THE long established and widely known quality of Barrett Everlastic Roofings eliminates risk and uncertainty from roofing purchases.

These roofings are made by the company that has been the leading manufacturer of roofing materials for over fifty years. They are giving perfect satisfaction on thousands of farm buildings, country and city homes and factories all over America.

You can use them on any and every steep-roofed building about the place. They are made in four styles—two forms of Shingles and two of Roll Roofings.

Both styles of Everlastic Shingles are surfaced with real crushed slate in rich art-tones of red or green. You can't buy more artistic roofs at any price.

They are low in price, easy to lay, highly fire resistant and wonderfully durable.

One style of roll roofing is also slate surfaced in red or green. The other—Everlastic "Rubber" Roofing—is plain surfaced and gives unfailing satisfaction wherever this type of roofing is needed.

Illustrated booklets of each style of Everlastic, free on request

The Barrett Company

New York Chicago Philadelphia Boston St. Louis Cleveland Cincinnati
Pittsburgh Detroit New Orleans Birmingham Kansas City Minneapolis
Dallas Nashville Salt Lake City Seattle Peoria Atlanta Duluth
Milwaukee Bangor Washington Johnston Syracuse Lebanon
Youngstown Toledo Columbus Buffalo Richmond Baltimore Bethlehem

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Everlastic "Rubber" Roofing

This is one of our most popular roofings. A recognized standard among "rubber" roofings. Famous for durability. Made of high-grade waterproofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions.

Tough, pliable, durable and very low in price. It is easy to lay, no skilled labor required. Nails and cement in each roll.

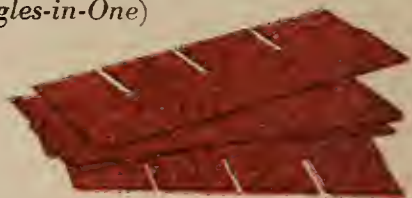


Everlastic Slate Surfaced Roofing

A high-grade roll roofing, surfaced with genuine crushed slate, in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.

Everlastic Multi-Shingles (4-Shingles-in-One)

Made of high-grade thoroughly waterproofed felt and surfaced with crushed slate in beautiful natural slate colors, either red or green. Laid in strips of four shingles in one at far less cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Need no painting.



Everlastic Tylike Shingles

Made of the same durable slate-surfaced (red or green) material as the Multi-Shingles, but cut into individual shingles, 8 x 12 3/4 inches. Laid like wooden shingles but cost less per year of service. A finished roof of Tylike Shingles is far more beautiful than an ordinary shingle roof and needs no painting.



House and barns protected with Everlastic Shingles. Small building in foreground covered with Everlastic "Rubber" Roofing.



Have You Seen That New John Deere Plow?

Because it is built of new-process John Deere steel, the No. 40

weighs less than the average horse-drawn sulky plow;

pulls extremely light—a real fuel saver;

stands the strains under all conditions — its beams are guaranteed not to bend or break.

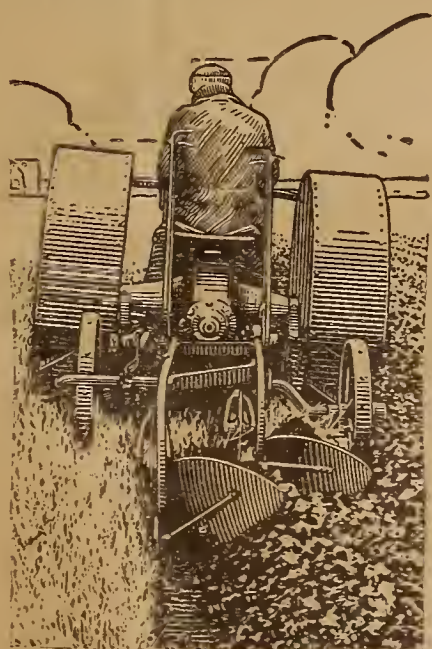
Due to the self-adjusting hitch—an exclusive John Deere feature — bottoms run true and level at all depths — they neither "nose in" nor "hop out" of the ground.

Its John Deere bottoms insure good work.

It's Built Especially For the Fordson Tractor

—a tractor plow that pulls so light that it soon pays for itself in lower fuel consumption, greater acreage per day, minimum wear on the tractor—in all the factors that mean lower plowing cost per acre—

—a tractor plow that has this desirable light weight and light draft plus tremendous strength—beams that are guaranteed not to bend or break; frame construction that stands all of the strain of utilizing the tractor's power under all conditions.



The No. 40 fits the Fordson. The No. 45 is built for use with ANY "two-plow" tractor.

Those are important features of the No. 40 that you are sure to appreciate.

Beams, braces and axles are made of a new process, John Deere steel that combines the desired lightness with the necessary strength.

It's the Plow with the Self-adjusting Hitch

The No. 40 has a self-adjusting hitch—an important advantage in plowing with the Fordson.

When you adjust the plow for depth with the depth lever, the hitch point auto-

matically regulates itself to the correct line of draft.

That means that the bottoms run true and level at all depths, doing uniformly good work all the time.

It means that there is no undue wear on shares because of bottoms "sledding" or "running on their nose"; no worry or loss of time over hitch adjustments.

The self-adjusting hitch is exclusively a John Deere feature. Any plow for use with the Fordson needs it, but—no other plow has it.

John Deere Bottoms do Good Work; Wear Well

The No. 40 is equipped with genuine John Deere bottoms—the bottoms that scour, wear well and make good seed beds.

These bottoms include both steel and chilled types in a variety of shapes to meet different requirements.

The shares are quick detachable—loosen one nut to remove a share; tighten the same nut and the share is on tight.

The power lift of the No. 40 is simple, strong and positive. It works perfectly. The lifting parts move only when the plow is being raised or lowered—practically no wear.

This is the Plow the Fordson Needs

If you are planning to buy a Fordson tractor, it will

pay you to investigate the No. 40.

The tractor will give you pulling power. It will be up to the plow you buy to apply that power. Remember that, no matter how well a tractor may do its part, the plowing outfit is no better than its plow—just as no knife is better than its blade. You need the best plow you can get.

The No. 40 may be on display in your town now. If it isn't it soon will be. Get acquainted with it thoroughly before you buy your tractor.

The best place to judge the No. 40 is in the field. Watch it at work and see for yourself how wonderfully light it pulls; how simple and strong the hot-riveted frame construction is; how the self-adjusting hitch keeps the bottoms running true and level at all times, and how the bottoms scour, pulverize and turn the soil in that John Deere way—the way the practical farmer wants it done.

Another Plow for ANY "Two-Plow" Tractor

If you are planning to buy a "two plow" tractor other than the Fordson you will be interested in the John Deere No. 45. This plow is exactly like the No. 40, except that it has a flexible hitch and rear furrow wheel. It has the fuel-saving light draft, the strain-resisting strength, and the seed bed-making qualities of the No. 40. It is adaptable for use with any standard two-plow tractor.

Ask us to send you free booklets describing these lighter, stronger plows for "two-plow" tractors. Drop us a postcard or letter today. Ask for booklets F-18

YOU have been hearing for some time, no doubt, that John Deere was building a new plow especially for the Fordson tractor.

Perhaps you are one of the many farmers who asked that John Deere build such a plow.

Perhaps you are one of the many who have gone to John Deere dealers with the query: "When can I see that John Deere plow built especially for the Fordson?"

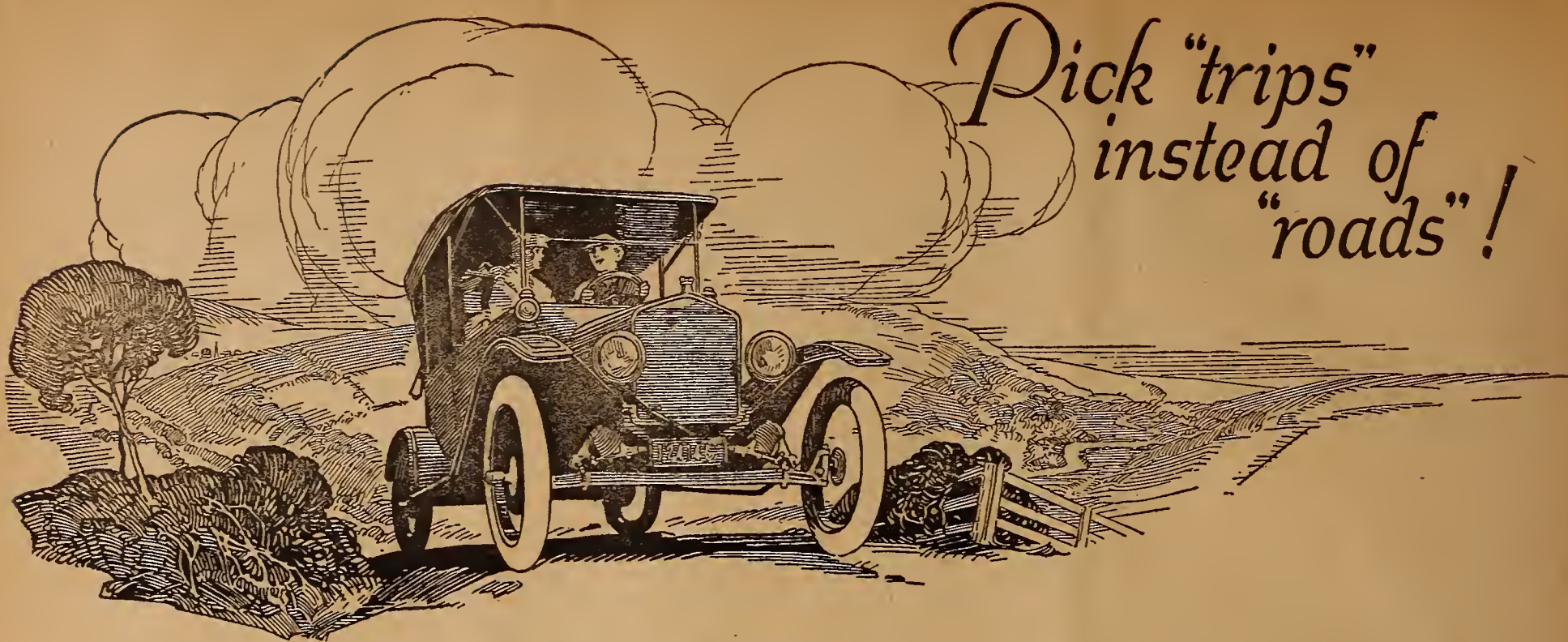
John Deere specialists took their time in building the plow. They had the John Deere reputation to consider, first of all. They knew that farmers expect especially good performance from a John Deere plow. Their task was to give the user the benefit of such performance behind his Fordson tractor—to fit a John Deere-quality plow to the Fordson as carefully as a good tailor fits a suit of clothes to a customer.

The plow is now ready. It has been branded with the famous John Deere trademark of quality. It is called the John Deere No. 40.

Here Are Features That You have been Wanting

Imagine a two-bottom tractor plow that is lighter than the average horse-drawn sulky plow—

JOHN DEERE MOLINE, ILLINOIS



WHEN you start out for a ride do you go where you wish to go, or where the roads are supposed to be good? Of course, some roads are impossible, but many so-called rough roads would be satisfactory if your Ford were equipped with Hassler Shock Absorbers.

Hasslers also protect your car from the bumps and jolts. They enable your car to travel all ordinary roads without injury. This protection means a saving of one-third of your tire and repair expense, and also lengthens the life of your car one-third.

Hasslers make your Ford ride like the highest priced cars. Bumps and jolts that ordinarily make riding unpleasant are not noticed when your Ford is equipped with Hassler Shock Absorbers.

Owners of Hassler-equipped cars drive farther with less fatigue for themselves, and less wear and tear on their cars. They pick trips instead of roads!

Hasslers can be installed on your car without necessitating any mutilation whatever. They do not change the appearance of the car.

They are made for the touring car, roadster, coupe, sedan and the Ford one-ton Truck. Your Hassler Dealer will see that your car is fitted with the right kind of Hasslers.

He will also tell you about the 10-Day Trial, which enables you to drive with Hasslers for ten days and if not satisfied have them removed and your money refunded. This enables you to get acquainted with Hasslers without risking your money.

If you do not know the Hassler dealer, then write us and we'll see that you secure Hasslers promptly.

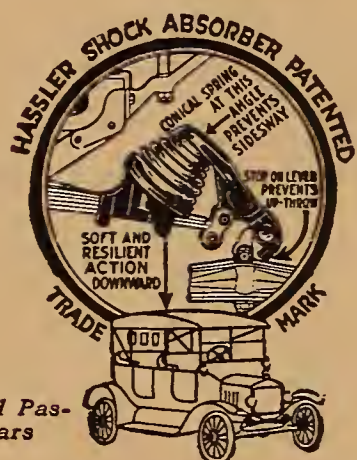
Opportunities now for exclusive distributors in many foreign countries.

ROBERT H. HASSLER, Inc. 504 Naomi St., Indianapolis, Ind.

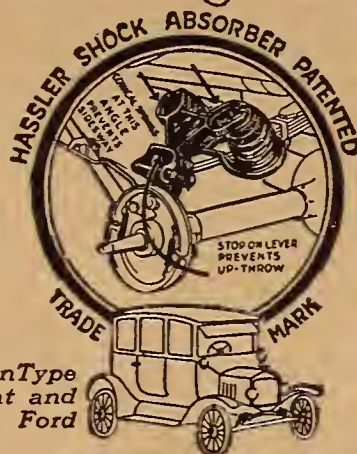
Made in Canada by Robert H. Hassler, Limited, Hamilton, Ontario

The Hassler Guarantee: "Absolute Satisfaction or Your Money Back"

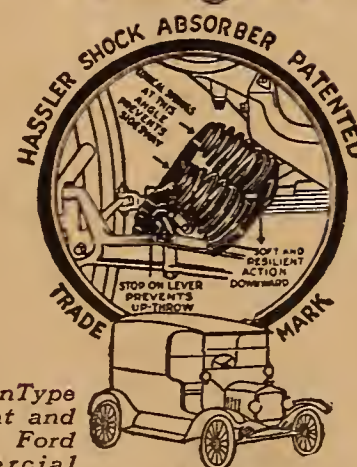
A Standardized Quality Product—Worth the Price



For Ford Passenger Cars



This Twin Type for Front and Rear of Ford Sedans



This Twin Type for Front and Rear of Ford Commercial Cars



This Twin Type for Front and Rear of Ford One-Ton Trucks

HASSLER
TRADE MARK REGISTERED
Shock Absorbers
PATENTED
for Ford Cars and Trucks

The conical springs set at the angle shown prevent sidesway and allow for the most resilient downward action. The springs compress on either upward or downward movements—do not stretch out of shape—do not allow up-throw. Hasslers last as long as the Ford and make it last.

Now See What They've Done!

By James B. Morman

Assistant Secretary Federal Farm Loan Board

WHAT will the farmers do for cheap loans in the future? For the last three years the Federal Farm Loan System has enabled farmers to borrow money at 5, 5½, and 6 per cent interest and to repay their loans a little each year over a 34-or 35-year period.

During three years the twelve federal land banks have loaned \$346,616,041 to 125,003 farmers, and twenty-eight joint stock land banks have loaned \$79,111,532 to 8,315 farmers. Thus 133,318 farmers have reaped the benefits of cheap credit from March 27, 1917, when the first loan was made under this system, up to April 30, 1920, the date of the above statistics.

Still thousands of farmers wanted to borrow money under these conditions. The federal land banks have approved loans on hand for \$41,966,961 to 16,390 farmers. Evidently the farmers throughout the country not only want money to carry on their farms, but they also want it badly.

But this plan of making mortgage loans to farmers has been halted—temporarily it is to be hoped. An enemy hath done this. For more than six months the Federal Farm Loan System has been marking time, so to speak, because the dealers who had been buying and selling farm mortgages, and getting a good commission out of this business, were instrumental in having a suit brought to test the constitutionality of the tax-exempt features of farm loan bonds. The case was argued in Kansas City, Missouri, last fall, and the United States district judge dismissed the case.

But the enemies of the system wanted to paralyze its good work, so they appealed to the Supreme Court of the United States. It was argued there on January 8, 1920, but on April 26th the court handed down an order to have the case reargued. Since this cannot take place until next fall, there is little likelihood that this case will be decided until some time next winter.

Now thousands of farmers are wondering and asking why the land banks have to stop making loans because of this suit. That question is easily answered:

WHILE this is known as the federal system, it is not government money which is loaned to farmers. The original capital of the twelve federal land banks amounted to \$9,000,000. Of this sum the Government, in order to start the system going, subscribed \$8,891,270, the balance being subscribed by private individuals. Thus the only aid advanced by the Government in establishing this system consisted in supplying a large part of the capital without interest. But this capital is to be repaid, and part of it has already been paid back by the federal land banks.

The money which farmers borrow comes from the sale of bonds. The mortgages taken by the banks as a result of loaning their original capital were pledged as security for the issue of bonds. The Farm Loan Act declared that these bonds should be exempt from taxation. The bonds are sold to whomsoever will buy them. The money received from their sale is loaned to farmers, and this is the source of the more than four hundred million dollars which have been loaned in the past three years.

But the enemies of low-interest rates on long-time farm mortgage loans said unto themselves: "See how this system is undermining our business! We can no longer make loans at a high interest rate in competition with these low-interest, long-time federal loans. We cannot make a good commission in buying and selling farm mortgages. We have to stop this federal system or it will put us out of

business. The vulnerable point is their bonds. Why should they be tax-exempt? "It is true that the act says they shall be called 'instrumentalities of the Government,' but that does not make them so. Come, now, as an association, let us have a suit brought to test whether or not their bonds should be exempt from taxation, and

the high cost of farm products if farmers are handicapped for the lack of capital or the high cost of capital used in their production. To show how this case rings in the farmers and the Federal Farm Loan System, let me quote the following paragraphs from the statement of the case in the brief of one attorney for Mr. Smith:

Fritz Hahn standing behind his companion of thirty years—his anvil



A Blacksmith Who Loves His Anvil

ONE has heard of the devotion of a violinist for his violin, but it's unusual to find a blacksmith who, through years of association with his anvil, has come to regard it as almost a thing of flesh and blood.

To the reader, this old Peter Wright anvil, the object of such tender regard by its owner, Fritz Hahn of Hunter, Texas, is nothing more than a piece of old iron ready for the junk pile. The outsider can't read the significance of that deep dent in the horn, made by straightening and lengthening thousands of horseshoes, or the deep notch in the other side, where the heels of these same horseshoes are hammered into shape.

If a boy of fifteen should behold a string of horses extending all the way from the center of New York City to Independence Hall, Philadelphia, and should understand that it was to be his job to shoe each and every one of these quadrupeds, he would be somewhat appalled. But that is exactly what Mr. Hahn, who is now forty-five years old, has done since he entered the blacksmith trade. These statistics are based on his own computation, allowing for slack and rush seasons and time to learn his trade. Of course, he has done other things on his anvil besides "shaping slippers for horses." He has hammered out wagon tires, mended andirons, resharpened crowbars, and done the thousand and one things the useful blacksmith does.

Hahn has had many offers from curio seekers of a brand-new, modern anvil in exchange for his ancient pet. It is seldom that an anvil has such a span of life. Its fame has gone abroad, and many tradesmen in the anvil world make the pilgrimage to the picturesque old shop on Milan Street to view the anvil which has worn out three wooden blocks, goodness only knows how many hammers, and is still in the running.

However, no inducement can make Hahn part with his anvil, though he is the only one in the shop sufficiently familiar with the antique implement to use it to any advantage.

When sick with the "flu" last winter, the boys kicked the old anvil into a corner and installed a new one, saying that "they couldn't make horseshoes on an iron relief-map of the Rocky Mountains." But the minute Fritz was back on the job the anvil was reinstated.

Mr. Hahn does not anticipate that his anvil will have to serve the following purpose very soon, but when he dies, and is carried out to Hollywood Cemetery, he wants this faithful companion of his lifetime to be engraved with some simple epitaph and set up as his tombstone.

ANNIS SALSURY SPAYTH.

while the suit is pending they will be unable to make loans. Nobody will buy farm loan bonds when in doubt as to whether they have to pay back taxes on them."

And this is just what they did. The suit was begun in the name of Charles E. Smith vs. Kansas City Title and Trust Company, et al. But no one could imagine from the title of this case that it had anything whatever to do with the Federal Farm Loan System. However, it does and that most seriously so far as the farmers throughout the country are concerned, as well as the general public, who will also be affected by

"The Kansas Title and Trust Company was about to invest a large amount of its corporate and fiduciary funds in the purchase of farm loan bonds issued respectively by joint stock land banks and by federal land banks, because the company believed the bonds to be tax-exempt.

"Charles E. Smith, a director and large stockholder in the company, objected to the proposed investment upon the ground that the tax exemption was void and that the bonds were taxable; he voted against the resolution of purchase, and then filed this suit in the district court to enjoin

the company from purchasing the bonds.

"A federal land bank and a joint-stock land bank intervened, and were made parties defendant; the Attorney-General of the United States appeared as *amicus curiae*; a motion was made to dismiss for want of equity; the motion was sustained; the plaintiff declined to plead further; the bill was dismissed; the appeal taken."

Now, in all probability, Mr. Charles E. Smith did not care a straw whether or not it was constitutional to exempt farm loan bonds from taxation. He was not the moving spirit in bringing the action. The Farm Mortgage Bankers' Association of America was the great enemy lying under cover. When the mischief had been done, and the Federal Farm Loan System had been halted in its work of bringing credit and financial relief to hundreds of thousands of farmers, the association came out in the open and showed its hand. This is made plain by the fact that, in a letter dated May 12, 1920, which accompanied Bulletin No. 66, the chairman of the membership committee said that the Farm Mortgage Bankers' Association "is directly responsible for the federal land bank and the joint-stock land bank not being in operation to-day and not being able to operate until some time next year."

HERE, then, are the main facts how the Federal Farm Loan System came to be halted. For the past three years interest rates on farm mortgages were more nearly uniform at 5½ and 6 per cent than they have ever been before in the history of our country. But already, since this suit was brought, interest rates have been raised by private money lenders and bankers from one to four per cent on loans to farmers. It is becoming increasingly harder for farmers to provide themselves with capital in order to raise food and other raw materials for our people. Many of them are begging Congress and the Farm Loan Board to relieve the situation. Here is part of a typical letter written by a farmer in Oregon under date of May 19, 1920:

"I understand there is a sort of uneasy feeling about the doings in court about trying to discontinue the loaning to farmers that need the assistance of a loan such as the Federal Loan System. I would like to get a loan on my farm to pay off the mortgage that is on it now, and there are several of my neighbors that also would like to get a loan. It will be a real hardship on the already overburdened farmer if Congress should discontinue the Farm Loan System."

But Congress is far from that attitude of mind. Recognizing the appeal of the farmers and the pressing need of our country for agricultural products, Congress has just passed a joint resolution, and the President signed it on May 26th, authorizing the Secretary of the Treasury to buy federal farm loan bonds to provide the funds for making loans approved by the banks up to March 1, 1920. This act will probably provide between thirty and forty million dollars. After that sum has been expended by the banks in meeting their own debt obligations and making loans to the farmers whose needs are most urgent, the system will simply have to halt again until the decision of the Supreme Court, unless some other means of raising funds for lending to farmers shall be provided.

The ultimate effects of this lawsuit, then, cannot now be estimated. If the Federal Farm Loan System should be permanently halted, the credit conditions of farmers will be what they were before Congress passed the Farm Loan Act. With farmers having to pay higher interest rates, the cost of raising farm products will be greater.

The Truth About Lime—When and How to Use It on Your Farm

By Alva Agee

THERE is a story of a fifth-acre plat of ground which, like some millions of other fifth acres, lay sullen in the Ohio Valley, depressed in productive power and unfriendly to clover. Such soil is disheartening, and especially to one dependent upon it for the family income. Its right treatment in this case was blundered upon, and some influence that this plat exerted on American farming justifies the telling.

It was along in the nineties of the last century that a commercial fertilizer syndicate wanted its fertilizers tested, and in the scheme was the requirement that five alternating fifth-acre plats should be given some lime. It requested me to purchase lime at its expense, and to put 400 pounds upon each fifth acre. This was a new experience for that soil, and the effects of the various fertilizers with and without lime upon the potato crop were carefully recorded and reported to the people furnishing the fertilizer.

This ended the test that the syndicate had in mind, which concerned only the potato crop and the effectiveness of potash in combination with the other fertilizer materials. Wheat followed the potatoes, and then the entire field was seeded to clover in the spring, regardless of past failures.

The second summer afterward these five fifth-acre plats and their check plats, half a mile from a highway, made an unexpected and striking picture. The limed plats were covered with red clover in bloom, and there was clover only where the lime had been applied.

The appearance of the clover in that way seemed a most extraordinary thing, and was not fully appreciated until Director Thorne of the Ohio Experiment Station realized what the interpretation might be. Then began the series of lime experiments at the Wooster Station that have had a greater cash value to farmers than the work of the entire station could cost for a century. Those fifth-acre plats had a soil typical of millions of acres in respect to lime deficiency and to sullenness under mistreatment.

Lime is needed as a plant food, and yet it has been more or less rightfully assumed that there was enough lime in some form or other in most soils to supply the requirements of plants, so far as actual food was concerned. Nature used an immense amount of lime in the making of soils, and those are most valuable in which the largest amounts of lime were placed.

ONE most important office of lime is to keep the soil in a sanitary condition. Acids constantly tend to form in a soil, and lime is nature's natural agency to combine with these acids and destroy their toxic effect. Limestone is our chief source of material for use when there is a deficiency, and man learned in an early day to burn and slake it to put it into condition for distribution.

The lime in the stone is in a carbonate form, and the slaked lime goes back to that form when exposed to the air. Perfectly air-slaked lime is identical with the original limestone in composition. Within recent times we have learned to put the limestone into form for easy distribution by grinding or pulverizing, and the material is just as effective for correcting acidity as air-slaked lime, pound for pound, if it is absolutely fine. Tests and experience upon thousands of farms prove that when the limestone has been made as fine as flour it is immediately available for combination with soil acids, and this is the chief work that we want lime to perform in the ground.

And there the argument starts, because there are degrees of fineness in limestone; there is the old contention that caustic lime destroys the humus; there is varying ease in distributing the kinds of lime upon the market, and there is the reasonable expectation that when fresh-burned lime has so much "pep" in its make-up, and limestone seems to have none, the former must be the more dependable.

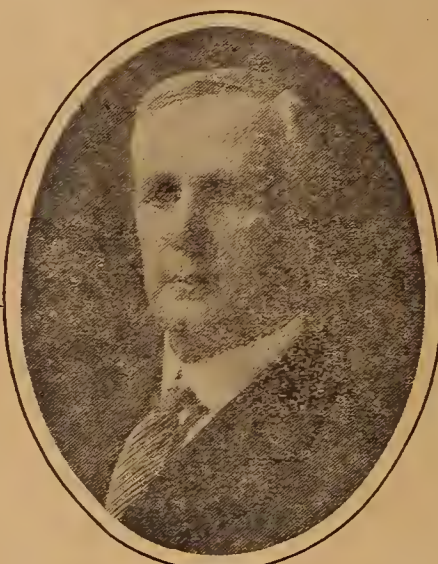
The argument starts most of all because the preparation of lime and limestone for use on land has become a big business enterprise in the last fifteen years, and it is a poor salesman who does not believe in his

goods. The sales are made chiefly in the regions that formerly used no lime, and that have a marked lime deficiency in their soils.

It is true that farmers who had stiff limestone soils had burned lime and used it freely in a caustic state to improve the physical condition of the land and to free plant food, but it was the discovery that

of the stone, and therefore 56 pounds of fresh-burned stone lime accomplishes the same purpose as 100 pounds of the pulverized stone. When moisture is applied to the 56 pounds of fresh lime to slake it, the weight increases to 74 pounds, although the content of calcium necessarily remains the same. It follows that 56 pounds of stone lime has the same value as 74 pounds of hydrated lime and 100 pounds of limestone, provided all afford the same facility for even distribution in the soil, and are fine so that there is immediate availability.

The slaking of stone lime on the farm is a disagreeable job, and usually is attended by some waste. In limestone sections where the stone was burned in large quantities and the lime was applied far too freely, it was a common practice to throw the stone lime into piles in the field and let it slake. Rains would cause some of this



Alva Agee

Alva Agee, Secretary of Agriculture of New Jersey, is one of the foremost living authorities on the use of lime in agriculture. He, with Director Thorne of the Ohio Experiment Station, were the pioneers of the lime movement in America. If you want to know more about the subject than is told here, read Mr. Agee's book "Essentials of Soil Fertility." Mr. Agee was born at Cheshire, Ohio, in 1858.

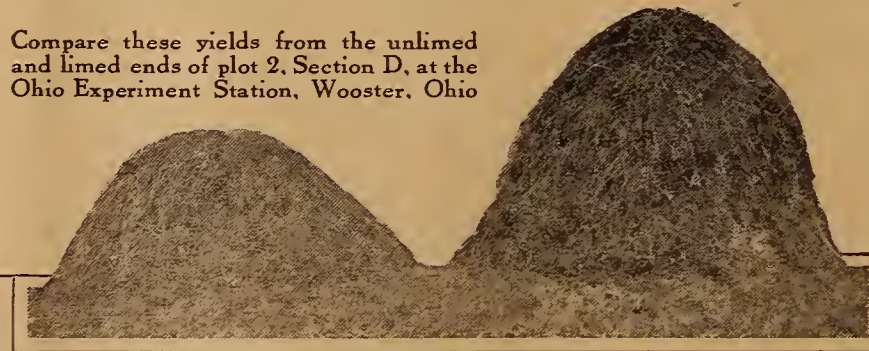
Making Sour Soil Sweet

MOST farming land in all our Eastern and Southern States has an absolute lime deficiency, and we detect it through failure to get good growths of red clover and in the prevalence of redtop and other acid-resistant plants.

When there is a lime deficiency, crop production is badly hampered. We do not get full returns from fertilizers and tillage. Usually we should make an application of lime in sufficient amount to meet the demands of the soil throughout an ordinary crop rotation, and we may use farm-burned lime or stone lime on the market, or hydrated or pulverized limestone. The caustic lime used in moderate amount cannot injure the soil, and is immediately effective. Distribution should be even as possible, and that is more easily secured by use of the commercial hydrate than by farm-slaked lime. Very finely pulverized limestone is immediately effective. When applying limestone for an entire crop rotation, we prefer one of only moderate fineness.

It is a pretty safe guess that an application of two tons of limestone or one of burned lime will correct soil acidity so that clover will grow, although some soils are far more acid, and some soils unfriendly to clover have their need met with a much lighter application of lime that serves the soil's purpose at least for a year or so. There is much in evenness of distribution, and the particles should be well mixed with the surface soil. Lime should pave the way for heavy sods, and heavy sods provide nitrogen and organic matter, and organic matter means productive power. A lime country is a rich country.

Compare these yields from the unlimed and limed ends of plot 2, Section D, at the Ohio Experiment Station, Wooster, Ohio



the greater part of our farm lands were acid and unfriendly to clover and to other crops that opened up a market for lump lime and agricultural lime and the hydrated and pulverized limestone.

It is acidity that is the handicap, and its correction is the one matter of interest. There is a need greater than all the manufacturers can meet, and it has been a big mistake on the part of salesmen to go out into all the by-paths of discussion about the advantage or disadvantage of a caustic form, and whether some magnesium in the lime was desirable.

These materials do vary in their value, because they do not have the same strength and physical condition, and we would be much farther along toward friendly soil conditions if the "talking points" were confined to strength, physical condition, and price. Nothing else matters much.

If a limestone were absolutely pure and were burned into lime, 44 pounds of the weight would escape into the air, as it is worthless matter and not calcium. The remaining 56 pounds is the valuable part

lime to puddle and get into unavailable form, and the distribution with a shovel was very uneven.

The ability of the lime to be distributed evenly and easily throughout the soil adds a great deal to its value per ton, and that is a consideration when choosing between lump lime and the hydrated. Manufacturers of the latter article have been able to push sales extensively because they furnished a lime easy to handle and to distribute, and many farmers have preferred to pay a long price for it rather than to slake the stone lime. There was the added inducement that the word "hydrated" had a scientific sound that might easily mean some sort of value added in a mysterious way. It is a good form, and in actual strength lies between lump lime and pulverized limestone.

The strength of the hydrate varies, and that is unfortunate because confusion in thinking is increased. Any contact of the hydrate with the air causes a partial return to carbonate form, weight being added, and in a way that is equivalent to

adulteration. Analyses of samples of the hydrate upon the market indicate that it may vary in quality almost anywhere from a pure hydrate to something little better than a pure carbonate, such as is furnished by pulverized limestone. But we are on a reasonably safe working basis when we assume that the hydrate, put upon the market by a reputable manufacturer, is between 25 and 33 per cent more effective than pulverized limestone. This applies equally to farm-slaked lime.

Another disadvantage in pulverized limestone lies in the presence of the useless weight in the stone that would have been driven off if burned. Transportation charges must be paid upon 45 to 50 per cent of weight that serves no purpose in the soil. On the other hand, pulverized limestone does not deteriorate in any way, does not need protection from the weather unless very finely ground, and is less unpleasant to handle than caustic lime. Its physical condition permits absolute evenness in distribution. We thus have the necessity of handling some useless weight, and of making a relatively heavy application to the soil; and, as a counterbalance, we have ease of handling and a lower price per ton.

THERE certainly has been unnecessary confusion in our thinking regarding the fineness to which limestone should be reduced. Experiment-station tests are conclusive that when it is made as fine as flour there is almost immediate availability, but it doesn't follow that we should want all of the stone made that fine. The added expense to secure fineness is worse than wasted wherever an application is made to last through an ordinary crop rotation, because some of the soluble stone will leach out of the soil.

The experience of practical farmers has brought probably the great majority of users of limestone to believe that the expense of pulverizing the stone should be sufficient only to reduce all of it to a fineness permitting it to pass through a 10- to 20-mesh screen. We then have a very considerable proportion that is absolutely fine and immediately available, and this is in sufficient amount to meet the soil's need for the time if the application is made heavy enough to provide coarser particles for use in later years of the rotation as disintegration occurs.

It must be borne in mind that the lime requirement of a soil continuously increases, and if we apply only enough lime to correct the acidity at a given time, tests made six months later will show a presence of some free acid.

It would not be good business to meet the lime requirement of all land. There are regions whose soils are so acid that the only thing to do for the present is to depend as far as possible upon acid-resistant plants, such as redtop grass and some vegetables and grains that are less sensitive than the clovers. The cost of applications sufficient to correct all acidity would be too great for some areas remote from sources of lime.

On the other hand, most land lying within farms that are kept under a good crop rotation should not be left acid. The handicap upon production is too great. Lime in some form should be supplied, and by far the greatest part of these deficient soils can be made friendly to the clovers and fully responsive to fertilizers and tillage by the application of two tons of moderately fine limestone applied once in each crop rotation of four years or so.

Some land is too deficient in lime to grow red clover or to make maximum yields of most crops, and yet has a lime deficiency that may be met by a single ton of limestone applied in each crop rotation. Certainly, where clover has failed one does not go amiss in using a ton of burned lime or two tons of limestone prior to the seeding to clover and grass.

If the application is reasonably heavy, it is most profitable to make it after a sod has been broken for corn. The yield of corn will be greater because bacterial action in the soil will be promoted, and the tillage of the crop will mix the lime so thoroughly that the clover and grass seeded with the small-grain crop which follows the corn will have every chance. [CONTINUED ON PAGE 24]

“I Paid \$3,500 for This Horse in 1915 and Refused \$60,000 in 1919”

By Charles Irvine

President of The American Association of Importers and Breeders of Belgian Draft Horses

SOMETIMES say that my life has been divided into three periods: The first was that of preparation, from the beginning until 1902, when Father and I went to the International and bought our first purebreds. The second was that of anticipation, from 1902 to 1916, when I was building up and breeding up my stud. The third was that of realization, and that brings me to Irvinedale Rowdy and Alfred De Bree Eyck, two of the greatest horses the world has ever seen.

In 1915, William Crownover, a Belgian breeder and importer, whom I am proud to call my friend, got word of a promising stallion owned by a farmer living near Conrad, Iowa. He had been offered to Henry Lefebure for \$2,000, but the offer was not accepted. Crownover and I decided to take a look at him.

That was how I ran across Alfred de Bree Eyck. It was a case of love at first sight. But the farmer who owned him had almost doubled the price when we reached his place. It took \$3,500 to buy Alfred then. I was not financially prepared to pay that big price offhand, so we left him on the farm while I went back to talk the matter over with my local banker.

I had not gone very far into the description of Alfred with my local banker, and outlined what I believed to be his possibilities, before he interrupted me by remarking that the money was mine. I have seldom failed to find a good banker responsive to a good opportunity.

In those days \$3,500 was a fortune to me. It was before the era of high prices, as we know them now. Had my local banker failed me, I would never have been able to buy Alfred. I am emphasizing this fact because I want to give him due credit, and show how profitable a complete understanding with a local banker proved to be in my own case and will prove in the case of others.

I went back to the farm near Conrad and bought Alfred. I paid a good, big price for him, as prices were then and as Alfred was then. I brought him to Irvinedale Farm and set about to develop him. It was a work of love, for Alfred appealed to me as no horse ever had before. I studied him, his traits, his individuality. I developed him, bit by bit, point by point, day by day. I never worked harder on any horse in all my life. But the results have splendidly vindicated and rewarded me.

I TOOK Alfred to Des Moines in August, 1916, a year and a half after I had bought him. He won first in the aged-stallion class, following that up with the Belgian stallion championship. He was placed the same at the Minnesota State Fair, the South Dakota State Fair, and the Interstate Fair at Sioux City.

Then I took him to the International at Chicago. It was only the second time I had exhibited there. The first had been in 1911. Alfred repeated his performances, winning first place in the aged-stallion class and the Belgian stallion championship.

The next year, 1917, I went back to the International with a four-year-old stallion, Irvinedale Rowdy, bred on my farm. He swept the platter wherever shown that year, closing the season by being placed as senior and grand champion stallion at the International. John Brunton of Aspen, Colorado, looked him over and bought him for \$25,000. That was the highest price ever paid, at that time, for an American-bred horse of any breed.

Mr. Brunton had Irvinedale Rowdy two years, when he died, on Thanksgiving Day. Less than a week later, while I was attending the 1919 International, I received an offer from Mr. Brunton which has never been equaled in the history of purebred horses in America.

I was in the show ring at the International, where I won the grand champion-

ship on my Belgian mare Salome, and some other awards, when a telegram was placed in my hands. It was from John Brunton, and read as follows:

“Irvinedale Rowdy died Thanksgiving

of my mind, but it was impossible. Between trying to remember my impromptu speech and decide whether to accept the offer or not, I never spent such a bad day in all my life, though it should have been the best. I don't know what I said when introducing the various speakers. I seemed to see a string of ciphers chasing a figure 6 all over the tablecloth.

The next day I came to my senses and refused the offer. Not but that I would like to have John Brunton own Alfred, for Brunton is a prince of a fellow. But I figured that if Alfred was worth \$60,000 to some other man he was worth fully that much to me. All this occurred many

Here, for three generations, we have bred stock, according to our lights and likes.

It was a wild, primitive country when Grandfather settled ten miles from the little trading post which is to-day the city of Des Moines, capital of Iowa. He was obliged to be content with whatever came his way. It was enough to grub a clearing in the forest, to break the virgin sod, to lay the foundations for his son and his son's son.

My father went a little bit farther, but not far enough to suit me. He was attracted by the livestock opportunities of the new country. At the age of thirteen years I was feeding geldings for Father. That was twenty-five years ago. The business of fattening geldings for the Chicago market was profitable if carefully handled. At seventeen I was going about the country buying thin geldings for Father to feed and fatten—quite a job, as everyone will agree. It was while I was thus traveling about, seeing the meagerness of farms, the barrenness of some of the homes, that the idea took hold of me to drop the grades, with which we had theretofore been content, and take up purebred stock.

THE idea grew as I traveled and worked and thought. I had studied in the rural schools. I knew my physiology fairly well. I knew that blood will tell. I found out, by observation and by talking with the older men from whom I bought the geldings, that it tells fully as much with dumb brutes as with human beings.

I can remember when I first suggested to Father that we drop grades and take up purebreds. He was interested, but not convinced. I told him of things I had seen in my rounds of the new country: men following in their fathers' footsteps, content to tread the beaten path, when opportunity seemed to me to beckon. He listened while I talked of what I believed we could do.

We were poor folks, though we owned several hundred acres of Iowa farmland. But it was not bringing \$300 and \$400 an acre then, as it is

to-day. The price was nearer \$15 or \$25. Our market was far removed, and there were many obstacles. The prices of everything were correspondingly low. I argued, however, that by building and breeding purebred herds we would be forestalling the need of the morrow, that the opportunity was there and someone would take advantage of it; why not we?

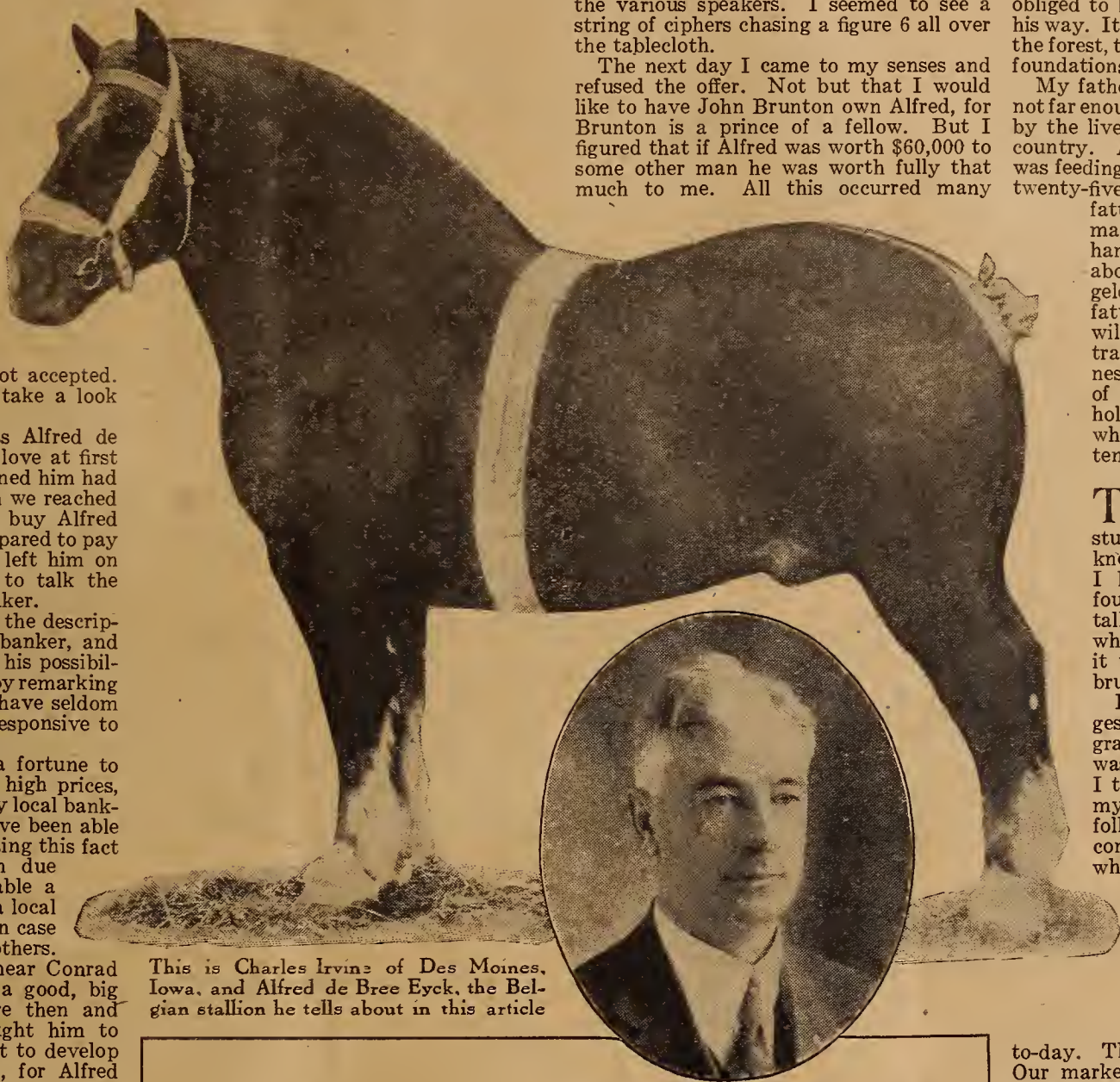
I have several things to thank for whatever success I have been able to achieve. First and foremost comes the faith and encouragement of my father. Second, the assistance of banking friends, to whom I have never turned in vain. Third, my unfailing faith in good blood.

My father was willing to give me a chance to make good. He wanted to keep his boy on the farm which his father had located, just as I want to keep my children here, generation after generation, as they do in the old country. With our modest means we set about to try the purebred game. We had gone in, at first, for Percheron horses, but when we tried the purebred venture we discarded them for Belgians, preferring them because of their size and easy-keeping qualities.

In 1902, Father and I attended our first International, at Chicago. We bought the second-prize two-year-old Belgian stallion Gabriel, paying \$1,800 for him. We went back next year and bought the champion Belgian mare and the first and second-prize three-year-old mares for \$2,600.

I was ready at last to show my father that my way of doing things was better than his and his father's.

I failed. Those first three mares of ours lost every foal for three years in succession. My father died about that time. We had formed a partnership, working together five years as Irvine & [CONTINUED ON PAGE 25]



This is Charles Irvine of Des Moines, Iowa, and Alfred de Bree Eyck, the Belgian stallion he tells about in this article

A Little Brains Well Used Beats a Lot of Brains Not Used at All

THIS is the story of a young Iowa farmer, of the same clay, the same education, and the same seemingly small opportunity as thousands of other young farmers all over the country, who dreamed a dream and stuck to it until he made it come true.

He loved horses, and therefore he made horses his business. So hard did he work, so thoroughly did he learn, so firmly did he believe in his business, that in 1915 he bought a Belgian draft stallion of a neighbor for \$3,500, borrowing the money to do it, and reared the animal so capably that in 1919 he was offered \$60,000 for it—and refused to sell.

The story of this man is a real inspiration to every young man among us. He doesn't lay claim to having had any more brains than the average young farmer, but he knew what he wanted to do, why and how he wanted to do it, and he stuck to it until he did it.

Sounds simple enough, doesn't it? And it is simple. The trouble with most of us is that the sensible way of doing things often seems so simple to us that we turn up our noses at it.

After all, the man who does what he likes best, learns all he can about it, has a definite plan, then sticks to it, is usually the man who wins.

THE EDITOR.

morning. Will give you \$60,000 for Alfred de Bree Eyck.”

I was to preside that evening over a banquet given by the American Association of Importers and Breeders of Belgian Draft Horses, of which I happen to be president. I had a sort of impromptu speech made up in advance, and was scared to death for fear I would forget it and fall down. You see, it isn't every day I am offered \$60,000 for a horse that cost me only \$3,500.

Well, I tried to keep that telegram out

months ago. I have never regretted my decision for a moment.

But back of that \$60,000 offer is the long story of my small start, my failures and my struggles. They were hard, but they all helped me along toward a little success.

I was born on the farm upon which my grandfather located back in 1855. He was a pioneer. He had hauled the material for his house, through the woods, from the terminus of the new railroad, thirty miles away. Here my father lived for fifty years.

Those Blasted Bees!

Being the personal experience of an amateur bee woman who suffered more than one stinging rebuke from the little fellows

By Mrs. E. C. Warren

Illustration by Tony Sarg

NOW if the reader imagines that I am advising him how to enter the bee business let him dismiss that idea at once. I am advising him how not to enter it.

Would that some kind friend had done this for me. I would have been saved much suffering.

My interest in the honeybee was first aroused in my study of entomology. I found him distantly related to the scarabæus, the sacred beetle of the Egyptians; and when, on continuing the study, I found that "on the outside of the honeybee's hind legs" was a "smooth hollow, edged with hairs" in which he "carried the bee bread," this interesting fact was sufficient to make me decide to cultivate a closer acquaintance with the small fellow.

So I began to inquire of my neighbors where I might buy some bees. I could find none for sale, but one day I heard of a wild swarm which the finder said I could have, as he was unable to hive them. Of course I should have taken warning at this, for he was an experienced bee man, but I am hard to turn when I set my head, and I was determined to get those bees somehow.

So I got together all the things necessary for capturing them—a veil, gloves, smoker, muslin slip, and a two-gallon bucket. The bees were settled on a fallen tree, cut down by the man who found them, and about a mile from my home, in an almost inaccessible hollow. Well, I hurried, fearing someone would get them before I got there.

I needn't have hurried. The bees came to meet me. I was made aware of their presence when I came within a hundred yards of them by being met with two stings belonging to two of the loudest singing insects I ever heard. Thinking it time to put on my veil, I did so, carefully, I thought; but, not knowing the quick eye of the bee, I failed to fasten it securely. I thought that when he saw that I had on a veil he'd know he could not sting me.



I clapped on the lid and ran

Thus properly prepared, as I thought, in veil and gloves, and with bag held open with a hoop, I lighted my smoker and walked in. That cluster of bees did indeed present a beautiful sight to a naturalist's eyes, and I should have enjoyed watching them a while. But they seemed a little restless, and kept hitting me on the shoulders and about, and as I had some distance to go I decided not to take the time for this watching but to get to work at once.

So, breaking a good stiff brush from a bush, I began to rake them into the sack, my idea being to remove the hoop and tie the top when I had all the bees safely in. Well, that sounds very plausible on paper, and that was where I had previously worked it out, but theory and practice do not always agree. In this case they were far apart. For, instead of lying comfortably in the bottom of that bag, as theory said they should, but few of them ever hit

it. Instead, those bees rose like an army, and like an army they fired. My veil was not together behind, so it was but a few seconds until my eyes, hair, neck, face, and all the rest of me was covered with bees.

I saw that I was not getting any in the bag, so, dropping that, I took the bucket and began to grab such as I could lay hands on and put them in that. My suffering from the stings by this time was awful, and seeing that I had a cluster in the bucket I clapped on the lid and ran. Of course the bees went with me, for those that were not in the bucket were in my clothes. These I shed, and, clad mostly in the primitive robes of mother Eve, I attempted to hide behind some bushes, but here the bees found me, and remained until most of them had committed suicide by stinging me.

After what seemed like hours to me, I crept out and into enough of my clothes to get home in, but I was so sore and swollen that I presented a pitiable sight, and people said it was funny. I am glad that I "never see a joke," if that was one.

Well, I got that bucket of bees home and, taking them up-stairs to my bedroom, I began the difficult operation of transferring them to my observation hive. This was made with a glass front, and I had fondly hoped to sit by and watch them bring in their bread and honey and place it in the comb. I had put comb foundation in the frames in the hive, and expected also to watch them draw this out.

However, in the transfer a bee escaped. While I was mighty nervous from the many stings already received, I became more so, and allowed the funnel by which I was transferring the bees to drop. The bees arose in a fog. That finished my nerves.

I ran from the room and closed and locked the door. I sent for my neighbors, and offered a reward to anyone who would kill the bees for me. Night was drawing near, and I needed my bedroom, but the heartless neighbors [CONTINUED ON PAGE 31]

THERE were three in the meadow by the brook
Gathering up windrows, piling cocks of hay,
With an eye always lifted toward the West,
Where an irregular sun-bordered cloud
Darkly advanced with a perpetual dagger
Flickering across its bosom. Suddenly
One helper, thrusting pitchfork in the ground,
Marched himself off the field and home. One stayed.
The town-bred farmer failed to understand.

"What is there wrong?"

"Something you just now said."

"What did I say?"

"About our taking pains."

"To cock the hay?—because it's going to shower?
I said that more than half an hour ago.
I said it to myself as much as you."

"You didn't know. But James is one big fool.
He thought you meant to find fault with his work.
That's what the average farmer would have meant.
James would take time, of course, to chew it over
Before he acted: he's just round to act."

"He is a fool if that's the way he takes me."

* * * * *

"Don't let it bother you. You've found out something.
The hand that knows his business won't be told
To do work better or faster—those two things.
I'm as particular as anyone:
Most likely I'd have served you just the same.
But I know you don't understand our ways.
You were just talking what was in your mind,
What was in all our minds, and you weren't hinting.
Tell you a story of what happened once:
I was up here in Salem at a man's
Named Sanders, with a gang of four or five
Doing the haying. No one liked the boss.
He was one of the kind sports call a spider,
All wiry arms and legs that spread out wavy
From a humped body nigh as big's a biscuit.
But work!—that man could work, especially,
If by so doing he could get more work

The Code

From "North of Boston"

By Robert Frost

(By Courtesy of the Henry Holt Company, Publishers)

Out of his hired help. I'm not denying
He was hard on himself. I couldn't find
That he kept any hours—not for himself.
Daylight and lantern light were one to him;
I've heard him pounding in the barn all night.
But what he liked was someone to encourage.
Them that he couldn't lead he'd get behind
And drive, the way you can, you know, in mowing—
Keep at their heels and threaten to mow their legs off.
I'd seen about enough of his bulling tricks
(We call that bulling). I'd been watching him.
So when he paired off with me in the hayfield
To load the load, thinks I, Look out for trouble.
I built the load and topped it off; old Sanders
Combed it down with a rake and says, 'O. K.'
Everything went well till we reached the barn
With a big catch to empty in a bay.
You understand that meant the easy job
For the man up on top of throwing down
The hay and rolling it off wholesale,
Where on a mow it would have been slow lifting.
You wouldn't think a fellow'd need much urging
Under these circumstances, would you now?
But the old fool seizes his fork in both hands,
And, looking up bewhiskered out of the pit,
Shouts like an army captain, 'Let her come!'
Thinks I, D'y'e mean it? 'What was that you said?'
I asked out loud, so's there'd be no mistake,
'Did you say, Let her come?' 'Yes, let her come.'
He said it over, but he said it softer.
Never you say a thing like that to a man,
Not if he values what he is. God, I'd as soon
Murdered him as left out his middle name.
I'd built the load and knew right where to find

Two or three forkfuls I picked lightly round for,
Like meditating, and then I just dug in
And dumped the rackful on him in ten lots.
I looked over the side once in the dust
And caught sight of him treading-water-like,
Keeping his head above. 'Damn ye,' I says,
'That gets ye!' He squeaked like a squeezed rat.
That was the last I saw or heard of him.
I cleaned the rack and drove out to cool off.
As I sat mopping hayseed from my neck,
And sort of waiting to be asked about it,
One of the boys sings out, 'Where's the old man?'
'I left him in the barn under the hay.'
If ye want him, ye can go and dig him out.'
They realized from the way I swobbed my neck
More than was needed something must be up.
They headed for the barn; I stayed where I was.
They told me afterward. First they forked hay,
A lot of it, out into the barn floor.
Nothing! They listened for him. Not a rustle.
I guess they thought I'd spiked him in the temple.
Before I buried him, or I couldn't have managed.
They excavated more. 'Go keep his wife
Out of the barn. Someone looked in a window,
And, curse me, if he wasn't in the kitchen
Slumped way down in a chair, with both his feet
Stuck in the oven, the hottest day that summer.
He looked so clean disgusted from behind,
There was no one that dared to stir him up,
Or let him know that he was being looked at.
Apparently I hadn't buried him
(I may have knocked him down); but my just trying
To bury him had hurt his dignity.
He had gone to the house so's not to meet me.
He kept away from us all afternoon.
We tended to his hay. We saw him out
After a while picking peas in his garden:
He couldn't keep away from doing something."

"Weren't you relieved to find he wasn't dead?"

"No! and yet I don't know—it's hard to say.
I went about to kill him fair enough."

"You took an awkward way. Did he discharge you?"

"Discharge me? No! He knew I did just right."

Why I Left Iowa and Came East to Buy a Farm—And How It Works

By Clifford P. Fawcett of Belfast, New York

I APPRECIATE this opportunity to tell FARM AND FIRESIDE readers my experience in moving from Iowa, where I was a renter, to a farm of my own in New York. For my wife and I believe there is a greater opportunity for folks like us, with a small amount of capital, to buy a place and make good at farming in New York State than in any other region we know or ever heard of.

When we bought our 100-acre farm in southwestern New York, we had enough money to pay down \$2,000, and a little over to run on and make needed improvements. That was in December, 1918. The price of the farm was \$5,000, including a good house and barn, a few tools and a little feed. If we have good luck, in another year—before I have reached my twenty-eighth birthday—we will be out of debt and have a good home and a profitable dairy business. We could have gone on making money as renters in Iowa, but it is a lot more satisfactory to own your own farm.

I have learned in my travels looking for a farm and working as farmhand that every section has its advantages and disadvantages, from a farming standpoint. I worked two years in Canada, and visited the cheaper land regions of Missouri, Arkansas, and other States. From 1915 until 1918 we rented a farm in Fayette County, Iowa. We made money there. I hold no grudge against Iowa. It is my home State and a wonderful farming section. But what chance has a man, with only a few thousand dollars, to own a farm there? With land selling from \$200 to \$500 an acre, we couldn't buy; and, even if we had, I don't see how we could have made interest on our investment. Certainly not after prices come down to normal.

Farming here is quite different from the corn belt. The soil is not so rich, taken as a whole, and the season is too short to mature corn. Last year our corn ripened and made a good crop, but it can't be counted on. There is no trouble raising good corn for ensilage. This region is fine for hay, oats, potatoes, and the hill pastures are splendid. The pasture helps because this is essentially a dairy region. If you are afraid to milk, don't come to New York, for dairying is the mainstay here—except in the counties that are especially suited for truck and fruit growing.

THERE are advantages here, however, that compensate for the deficiencies of soil and season. We are close to the big Eastern markets. Milk prices are just double what I got in Iowa. Hogs are about the same when we ship to Buffalo, and higher when they go to New York City. The climate is delightful in summer, and we don't mind the snow staying on in winter. The schools and churches are good. State automobile roads, connecting all the principal towns and cities, make motoring a pleasure. We like the people fine. They are thrifty and good neighbors.

When we decided that we would never get anywhere as renters, and wanted to buy a farm, I immediately thought of New York. I had always thought that I would like to go East, but had never been here before. Wife assented, and we packed up and came to Cuba. Instead of going at once to the real-estate agencies, we settled down and quietly took our time. We looked round carefully for a while, and then, after we had the lay of the land in mind, we picked out a reliable agency, and with its help found this place. We have never regretted our choice; in fact, we like it better all the time. There are farms here that are sold by unscrupulous agents over and over again. Each new owner discovers too late that the land is worthless, and sells out, often at an advance of \$500 to \$1,000 over what he paid.

A Westerner is easily fooled by these New York farms. Land here is not uniform as it is in the corn belt. Adjoining farms may be entirely different in productiveness.

You can't be guided altogether by prices either. Land potentially worth \$100 an acre may bring only \$50, while \$10 land may be held for

This is some of my herd stock on the farm. You can see the lay of the land in this picture

of the question. There is scarcely a farmhand to be had at any price. In that respect I believe the East is worse off than the corn belt. The manufacturing cities have drawn off most of the farm workers, and many of the farmers themselves have followed their children to the shops. That is one reason

last several years and makes possible the growing of clover and alfalfa. These will make good hay for the cows and, in addition, will build up the soil. I also applied 250 pounds of high-grade phosphate per acre to the plowed land.

By rotating crops and saving all the manure, I expect to be able to make this soil rich again. My rotation is corn, oats, and clover. I am using at present a mixture of alfalfa, alsike, red clover, and timothy, but expect to raise a good deal of alfalfa after the ground gets sweetened up and inoculated. I am convinced that many native farmers rely too much on commercial fertilizers. They do not use enough lime, and so cannot have clover. Timothy and corn are very hard on the soil when grown continuously. Their farms, therefore, grow sourer and poorer, and a little more fertilizer must be used every year.

In the two years I have been on this farm I have proved to my own satisfaction that lime, legumes, and manure will make this soil as productive as a lot of land that is selling for \$200 an acre. The clover and alfalfa I sowed last year is doing splendidly. All of the plowed ground was covered with manure. By feeding all of my own crops and, in addition, buying concentrates, the farm will actually be gaining in fertility. That, too, without the use of any commercial fertilizer excepting possibly a little phosphorus.

I AM now milking twelve cows. I can handle fifteen just as well, and expect to later on. These I bought after we came here excepting one heifer, which we brought with us from Iowa. She was too good to leave behind. Most of the cows are grade Holsteins. They are good milkers for the most part. We do not have a cow-testing association as yet. I wish we did, for I am sure there are a lot of robber cows in this community that are fooling their owners. Probably I have some too, if I only knew it. I use a purebred bull, and in this way expect to grade up my herd. Eventually I would like to get into purebreds. We haul our milk to a station at Rockville, three quarters of a mile away. Milk prices have been satisfactory on the whole, although last spring, when prices were going down and feed prices were soaring, it was rather discouraging. The milk market has been much better here than in Iowa.

We keep about 12 or 15 pigs all the time. They are purebred Duroc-Jerseys, but not registered. We have two teams which we brought with us from Iowa, with the exception of one horse, which was hurt and had to be killed. Of course we have chickens for our own use.

The farm is beautifully laid out. The house is on rather high ground, with a nice view across the valley. It is a very comfortable place. The barn and buildings are good too. We have made some repairs and additions to the barn, and installed a litter carrier in the cow stable. From the barn a pasture lot slopes down to a little brook which runs the year round, and furnishes fine water for the cattle. Above this creek pasture the land slopes gradually to the top of a long hill, where there is another pasture and a bit of woodland. In between is a fine large field where we raise hay and our grain crops. There are about 30 acres plowed, 15 acres in hay meadow, and 35 acres in pasture. They told us when we came that we couldn't raise enough hay for our own use, but so far we have been able to do so easily, and have a little left over!

An early-maturing corn will ripen here; but cannot be relied on every season. We use a variety of Calico corn that we brought from Iowa. It [CONTINUED ON PAGE 34]



This is Mrs. Fawcett and one of our able "farmhands"—a tireless worker who will not "quit and go to town"



This is the house we bought with the place. These Eastern farms usually have good houses on them. I don't think we could replace it and the barn for the price of the whole farm (\$5,000) if we had to build over



And here am I. This is one of the few times in my life that I ever stood around with my hands in my pockets

land is still cheap in the East.

My first step to put this farm on its feet was to make the soil sweet, so clover would grow. I applied one ton of ground limestone to the acre. This cost \$4 a ton, but is an investment rather than an expense, since it will

Suggestions to Western Men Who Plan to Buy Eastern Farms

By G. F. Warren

Professor of Farm Management, Cornell University

LARGE numbers of men are now coming from the Middle West to purchase Eastern farms because farm lands in the East have not advanced in price as much as Western lands. In fact, many farms can be purchased at the same price they sold for before we had the 50-cent dollar.

Many good farms can be purchased for less than the buildings and improvements are worth. Also, many good-for-nothing farms can be purchased for less than the buildings are worth. The newcomer needs to be sure which of the above he is buying before he makes an investment.

Farms in the Eastern States are much more variable than are farms in Iowa. In the hilly regions many of the farms on the hills are unproductive because the soils are deficient in lime and phosphorus, and because of shallow, poorly drained land. In the adjoining valleys, exceedingly fertile, deep, well-drained soils may often be found. Differences in value from \$10 to \$100 per acre may occur on different parts of the same farm.

Some men are making money on the poor hill farms that formerly have been idle, but when one buys such a farm he must realize that he has a long, slow task to make a productive farm. He invests in time what he would have to invest in cash if he bought a good farm.

Since the same farm may combine hill land and valley land, one needs to consider the area of each class of land in estimating which farm to buy. Fifty acres of \$100 land and 50 acres of \$10 land give a farm worth \$55 per acre; but if other conditions are the same, 40 acres of \$100 land and 60 acres of \$10 land give a farm only worth \$46 per acre. If the hill land is good pasture, and if the area is the amount wanted for pasture, it is much less objectionable than if the area of it is too great.

Since building materials are so high in price, it is desirable to buy land that has buildings that are satisfactory.

The value of state roads is often greater than is yet fully realized, so that farms on such roads often sell for less than they are worth. But some other state roads will be built, so that the probability of a road's being improved may make a farm not now on a good road a desirable investment.

There are excellent farms in each of the Eastern [CONTINUED ON PAGE 35]

And Are We Any Happier, Now That We've Got It?

By Bruce Barton



Real friends are Fisherman Michael Starkhouse, of Barnegat, New Jersey, and his constant companion, little John Roberts, son of the artist who took the picture. For hours at a time little John watches his big friend mend the nets. He carefully studies every motion. The "how" of it is still somewhat of a mystery to him, but all he asks is time and the privilege to look on so that he may learn. Some day he too will sally forth to rob the sea of its finny treasures—"when he gets growed up to be a great big man," he says.

ONE question always interests me when I am reading about any particular period in history:

"Was the average man, or woman, of that period happier or less happy than the average man or woman of to-day?"

"The world is getting fuller of so-called comforts all the time, but is it getting fuller of happiness?"

I do not know that there is any sure way of answering that question. Historians have differed also on it.

Froude, who wrote the great history of Henry VIII, had an idea that men were about as happy in Henry's day as they had ever been before, and better off than they have ever been since.

Everybody was poor, to be sure—as compared with now. But every man had his own home, and his grounds. Pleasures were simple, but were open to all alike, and no one lived in fear or want.

Emerson raised the same question.

When Arkwright came out of his cellar in England with the model of the spinning jenny in his hands, there were 5,000 skilled spinners in England, he tells us

And 250,000 Englishmen owned land.

Fifty years later there were machines that could do the work of 600,000 spinners.

And the number of landowners had shrunk from 250,000 to 32,000!

The machine had increased production, but it had decreased the number of those who lived free, independent, self-confident lives.

Civilization had advanced, but has happiness increased or diminished?

I hold no gloomy view of life; on the contrary, I get a little fonder of this good old world as every year rolls by.

But I find myself wonder-

ing about this question of happiness more these days than ever before.

For years, labor leaders and social reformers and uplifters have been talking as though they had the secret of salvation in their hands.

"Let us arrange matters so that every man will get a little more money and have to do a little less work," they have said. "Then the millennium will come, and we shall all be as happy as can be."

And the hour that they have waited for has apparently arrived.

Everybody *does* have more money than he ever had before, and—with the exception of us farmers—everybody is doing less work.

And are folks happier?

As I stand on the corner in New York and watch them go by, it seems to me I have never seen more care and fear and envy and covetousness in human faces before.

It's disappointing— isn't it?—to come to the end of the rainbow and find *only* a pot of gold?

If more money and less work are not the secret of happiness, what can the secret be?

There is an old rule of living, sometimes known as the Golden Rule. Its advocates claim that those who seek to follow it will really find that secret, and that there is no other way.

I wonder if it isn't worth trying?

We seem to have tried everything else.

21 Big Points to Watch in Organizing a Coöperative Association

By Tom Delohery

IF YOU have a coöperative marketing association of any kind in your community, or are thinking of starting one, you may be interested in the twenty-one most important things necessary to make such an organization successful, as they were worked out by John D. Black and Frank Robotka, of the University Farm, University of Minnesota, at St. Paul, on the basis of a study of the organization, development, and operation of coöperative associations among farmers in Minnesota.

This state incidentally, is said to be the banner coöperative marketing organization State in the Union, with Wisconsin second, and Iowa third.

In 1917, Minnesota boasted 2,950 such organizations, doing an annual business of \$118,710,000. In 1913, four years before, there were but 2,000 associations, doing a business of \$58,260,000. And while late reports are not available, men in charge of this work in Minnesota say the number is now more than 3,000; and the annual business shows a big advance over 1917.

The coöperative marketing associations in Minnesota include creameries, elevators, livestock shipping associations, cheese factories, stores, potato warehouses, fire-insurance companies, telephone companies, and about 275 miscellaneous societies.

The first point to consider, according to Black and Robotka, is what the *actual need* is for a coöperative organization in your particular field and for your particular product.

Consider, first, wherein the present system of marketing gives poor service, takes too much of your profit; second, where the present system is wasteful and expensive; third, where, by combining, farmers can reach better markets or turn out better goods.

In southern Minnesota, for instance, the organization of new coöperative societies is not as great as in other parts of the State, for several reasons, the principal one being that the margin on which local buyers operate is so small that a coöperative association could do little better. The farmers in this part of the State produce good fat cattle, and because of their outstanding quality and condition the buyers cannot make much money on buying and shipping them. If, on the other hand, all sorts of cattle and hogs were made, and the buyers insisted on big margins, a coöperative association, with an efficient manager, could save from \$50 to \$150 a car for the farmers.

SECOND—Is there enough business to keep a coöperative organization going? Black and Robotka found that this factor caused three times as many failures in coöperative creameries as any other reason. An association should be started only in a locality where there is enough business to support it. It would not do, they found, to establish a creamery in a community which specializes in beef cattle and hogs. Also, before organizing an association the farmers should not be too sure of taking patrons away from private business men.

In organizing an elevator they found the farmers should get a business of about 100,000 bushels of grain before starting. On the other hand, livestock associations do not need such a large business to be successful, because no capital is tied up in buildings and equipment, and the managers are usually paid a commission on each consignment.

A steady flow of business the year round is needed when much money is tied up in equipment and buildings.

Third—Do your neighbors want to coöperate, and will they stick together? This is what holds every association together. When farmers do not have any money invested in an association, say like a livestock shipping organization, unless every man has the proper spirit, it is easy for competitive buyers to get their business, especially if they offer good prices, with a view to breaking up the organization. Usually this is the case when an association starts doing business, and spirit is a big thing then. A membership bond will sometimes take care of such a situation.

Fourth—Don't scatter your efforts.

Concentrate. It has been found in Minnesota that associations are best supported when a community is engaged in *one* sort of farming. However, when farming is diversified, farmers have succeeded by having a main association with branches to take care of grain, milk, livestock, or other products.

Fifth—Pick your leaders carefully. Black and Robotka, in their study of the

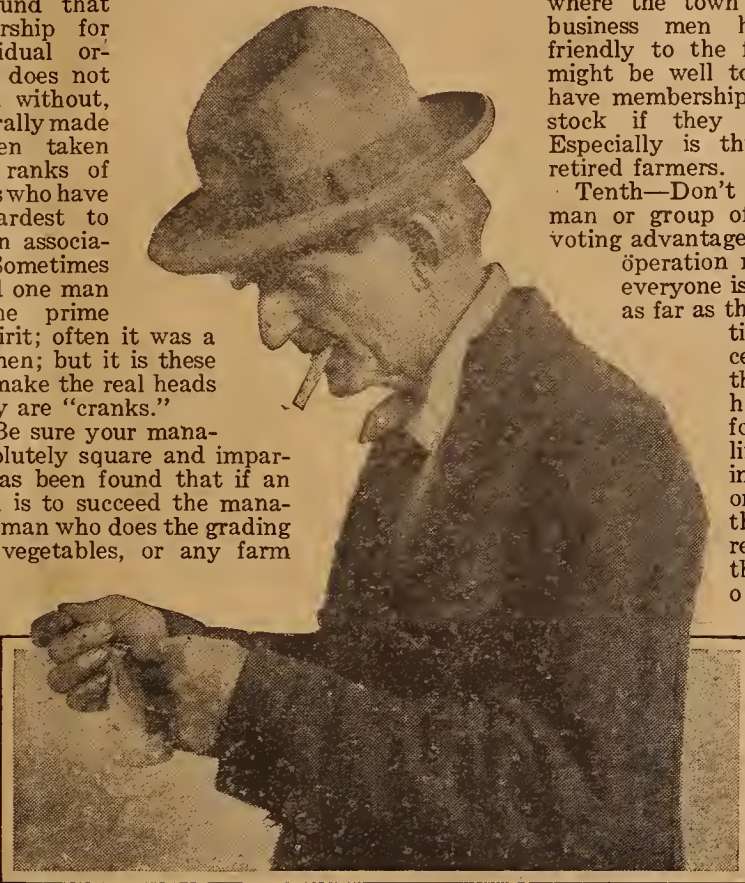
associations in Minnesota, found that real leadership for the individual organization does not come from without, but is generally made up of men taken from the ranks of the farmers who have worked hardest to organize an association. Sometimes they found one man to be the prime moving spirit; often it was a group of men; but it is these men who make the real heads unless they are "cranks."

Sixth—Be sure your manager is absolutely square and impartial. It has been found that if an association is to succeed the manager, or the man who does the grading of fruits, vegetables, or any farm

organization is the groundwork of these associations, and a successful society must have a solid foundation. The pioneer co-operators in Minnesota have found that some of the ensuing points worked out well.

Ninth—Choose your members carefully. Ordinarily the membership in a coöperative association should be limited to farmers only, but this is not a hard and fast rule. In communities where the town folks and business men have been friendly to the farmers, it might be well to let them have membership and some stock if they so desire. Especially is this true of retired farmers.

Tenth—Don't give one man or group of men any voting advantage. Real coöperation means that everyone is on a level, as far as the organization is concerned. To that end it has been found best to limit the voting power to one vote to the member, regardless of the number of shares



When "Lightnin' Bill" Comes to Town, Don't Miss Him!

HERE is a man who didn't succeed in his life work until after he was past sixty. His name is Frank Bacon, and he plays the part of "Lightnin' Bill" Jones in the play of that name, which Bacon wrote himself, and out of the success of which he has made an independent fortune in the last three years.

All of that time the play has been at the same theater in New York where Bacon gave the first performance, and it is such a success that even to-day the house is still sold out weeks in advance.

But one of these days "Lightnin' Bill" will get through in New York and go on the road, and when it comes to a city anywhere near you don't fail to see it. It ranks easily with Jefferson's "Rip Van Winkle" or Denman Thompson's "The Old Homestead."

Bacon himself struggled and worked along for half a century before he produced it. He started life as a boy on a ranch in California, and did almost everything under the sun, working as an actor between times, before he won his success. His wife and daughter play with him in "Lightnin'," and you will—well, you'll just love them all.

Mr. Bacon has written a book on "Lightnin'," which has been published by Harper & Brothers, New York. It can be procured for \$1.75, net.

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products marketed through the association, must be impartial. Favoritism has ruined many a coöperative organization which had a good future. The manager also should know his business, so that every man gets a square deal.

Seventh—Keep your system of doing business as simple as possible. Farmers are not up to a complicated business; and the most successful societies in Minnesota have started in a small way, and increased gradually as the leaders became experienced and able to do the work. An example of this is the California Fruit Growers' Exchange. If these men had started such a gigantic organization right off, they might have failed; but by gradually working up they were able to handle the situation without much chance of failure.

Eighth—Be sure that your rules and regulations are properly framed on the right basis. Minnesota farmers have found it wise to include in the constitution and by-laws reference to capital, shares, votes, membership, and dividends. Sound

owned by the individual. Black and Robotka consider this feature one of the essentials of a true coöperative association. Allowing one vote to each member, every man has an equal voice in the affairs of the organization. This feature tends to stimulate and maintain interest.

Eleventh—Don't give any one member too many shares in the association. If the number of shares an individual can hold is limited, the control of the organization will never fall into the hands of one man or a small group of men. Some associations restrict members to one share; others allow as many as five or ten; and by keeping the number down more farmers have a chance to become stockholders, thus providing for greater membership and a corresponding increased interest in the organization.

Twelfth—Let each member take out dividends in proportion to what he has put in in products. There are several ways of dividing the surplus funds, all of which are good. Some divide the surplus between stockholders, others pay a certain

per cent, and put the remainder in a sinking fund. The best way, they say, is to pay the farmers the prevailing market price for their products, charging a small fee for service, and then pay dividends out of this surplus. Some coöperative creameries pay out the surplus each month with the cream check, while livestock organizations give the farmers the net proceeds minus a small commission for the manager who cares for the stock and accompanies it to market.

In paying out as creameries do, the expenses of the creamery, such as taxes, depreciation, etc., should be taken care of before the profits are divided. This provides a fund to take care of these expenses.

Thirteenth—Be sure you have enough working capital to start on. Where the association handles livestock only, no capital is needed, because there is no investment in equipment; but where an elevator must be built or bought, or a creamery or warehouse provided, the capital should be large enough to take care of this expense. It is better to get the money first than have to appeal for more after the association has started. This gives a bad impression.

Fourteenth—Put one man in general charge, make him responsible, and make him plan his detailed organization carefully. This means planning the work of the association, and providing for the duties of the officials. If each man's work is determined beforehand, there will be no overlapping of effort, and each man will have so much responsibility. It will eliminate passing the buck, if things should go wrong. Black and Robotka have found strong associations where the work has been carefully planned and the responsibility fixed.

FIFTEENTH—Pay enough to get an able manager, then make him work. No matter how good a machine is set up, it will not run to best advantage unless it is looked after by someone who knows his business. Managers or employees should not be hired because they are friends of members or officials, but because they know their business. Salary should not stand in the way of getting the right man, for, as Black and Robotka point out, 80 per cent of the business failures are due to inefficient help and management. In their investigation they found some creameries had closed their doors on this account. Good managers can sometimes be obtained by taking over the employees of the private enterprise which failed because of the coöperative association. This holds true of elevators or creameries.

Sixteenth—Don't change managers and officers every whipstitch. Giving everyone a shot at holding office in a coöperative association has been found to be poor business. Old officials should be retained whenever possible, if they have proved their efficiency and know the business.

Seventeenth—Be sure to keep accurate accounts. This is very important. Unless records are accurate, the association is likely to go to the wall. It is the only way of telling if the business is being conducted at a profit or a loss, and so that every patron can get what is coming to him from the sale of his products. Every business, no matter what it may be, depends in a large measure on its records and accounts. Uniform systems of accounting for coöperative organizations have been developed by the Government, and can be had for the asking. They are adaptable to most any kind of a coöperative association.

Eighteenth—Have your accounts audited at least twice a year. When this is done every six months the real status of the business is known at a glance. This will uncover any frauds, or will find any errors in the records of the organization. Correct accounts are necessary before any dividends can be rightly paid.

Nineteenth—Base your association on community spirit. It has been found that coöperation works better in a locality where the people have something in common, such as race, religion, nationality, and where few of the farmers are shifting tenants. There are many places where the people do not have these things in common, and yet they get along, because they have the right spirit, [CONTINUED ON PAGE 36]

Where the Movie Actor's Money Goes

IF YOU wonder what movie stars do with all their money, look at these pictures and wonder no more. They support families. And you know what that costs nowadays. Here, for example, we have Billie Burke and her daughter Patricia. Billie married a rich man, but she still finds it worth while to hop out and earn a few paltry thousand in the movies for a new pair of medium-priced shoes and a modest hat or two.



Paramount

BRYANT WASHBURN here presents to the world, for the first time in any magazine, the picture of his second son, Dwight Ludlow Washburn, a very jaunty and captivating young person who, even at this early age, insists on showing his personality by wearing his hood on one side. Note also that Dwight's hands just naturally fall into the position of applause. This, of course, greatly pleases his father, because applause is what Bryant Washburn depends on to make him the money with which to keep Dwight.



Artercraft

IRVING CUMMINGS finds it advisable to fill in the gaps in his check book with a little back-yard poultry-farming. Thus he hopes to keep Irving junior, Mrs. Irving, and the dog supplied with the things they require. They manage to make out fairly well on their little place at Los Angeles, though Irving senior confides privately that he has never made any money on those chickens—takes much of his movie salary to keep them, in fact.



Paramount

CLARE BRIGGS earns oodles of money as a cartoonist, with his "Days of Real Sport," and his "When a Feller Needs a Friend" series, but even he has found expenses such that he consented to Ruth Clare, his young daughter, whom you see here all tickled over her milk bottle, accepting a limited engagement in the movies. She is starring in her father's "Wonder What a Baby Thinks About?" Here, evidently, this baby is thinking about food.



Famous Players—Lasky

CHARLES STUART, aged five and a half, and who has just taken part in his first movie, is here seen asking his friend Irene Castle, the dancer-actress-movie star, how long she thinks it will be till pay day. He has seen a very fine hobby horse in one of the stores near his home which appeared to him to be just about the proper sort of thing for one to spend one's money on.



Paramount



Artercraft

BUT what does young Master William Wallace Reid, son of our own Wallace Reid, care about expenses! As you can see by the expression on his face, the proudest boast of his young life is his ability to swing himself on "Daddie's" fingers. He actually boasts about it among the neighbors at Hollywood, California, thereby greatly annoying the other kids who can't quite cut it.

What Your Farm Wood Lot is Worth—And How to Get the Most Out of It

By George H. Dacy

Photographs by courtesy of the U. S. Forest Service



Many a farmer has paid for his farm in the cordwood he has cut and sold on the place

IF YOU have a wood lot of any kind on your farm, this article may contain information that will mean money in your pocket.

In it I will tell you how a few of your fellow farmers handled their timber supplies to the best advantage, and also tell you how you can find out exactly what your timber values are, and how to protect yourself and your second-growth stuff in making timber contracts.

The factors that make your timber so valuable nowadays are these:

Prices of lumber of every description are higher than ever before because our available stocks of hardwoods and pine are on the decline, and because of a necessary wave of postponed construction due to the war, which is making deep inroads on all kinds of wooden materials.

The average farmer is therefore finding it worth-while to accurately appraise and inventory the resources of his wood lot. Heretofore they have usually been at the mercy of timber scalpers and cruisers when they attempted to sell. They deemed it wiser to sell at home and receive immediate cash than to take the personal risk of shipping timber products by carload subject to inspection and price setting at the point of delivery. Thus the home buyer often has realized an unjust profit at the expense of the farmers.

Most farmers to-day familiarize themselves with the different kinds and grades of timber and lumber, the methods of estimating and measuring them, and the most dependable systems of marketing such material. To illustrate, take the cases of three farmers who sold their wood-lot products, as reported by the Federal Forest Service:

A Maryland farmer offered a tract of timber for sale for which a local buyer bid \$1,500. In order to make sure that he was receiving a fair price, the owner requested the state forester to examine the tract and estimate the amount of marketable timber. This timber expert also furnished the farmer with a list of reputable timber operators who would be willing to buy the stumpage.

THE result was that the farmer finally sold the timber for \$5,500, the man who originally offered \$1,500 raising his bid to \$4,500 when he ascertained that the farmer was forewarned and forearmed.

Furthermore, consequent on the activities and recommendations of the state forester, this timber tract was left in excellent condition, with the young growing timber undisturbed and sufficient seed trees standing to restock the open spots. The contract also required close utilization of all the timber without waste, by cutting the stumps low, and using to small diameters in the treetops, the lopping of tops for cordwood, and the scattering of the brush.

A Michigan farmer who owned 10 acres of basswood, hard maple, soft maple, red

oak, soft elm, ash, and beech trees aggregating about 120,000 board feet, was offered \$1,000 for the timber. Before selling he consulted an expert forester, who henceforward assisted him in his marketing operations, so that the tract ultimately sold for more than twice what was first offered for it.

Another farmer in Ohio was bid \$550 and \$600, respectively, by two timber buyers for his surplus wood products. A relative urged him not to accept either of these offers, but to hire a portable sawmill to cut out the material. The farmer did so, and realized a net return of \$1,400 from the rough lumber, white oak, hickory, and elm butts which he sold for hoops and wagon stock, and the railroad

ties, poles, and cordwood.

In western Ohio a wood-lot owner who had carefully protected and nurtured his best timber to maturity accepted a local dealer's lump offer of \$260 for the material on 6.5 acres. A careful estimate made by a federal forester showed that more than 84,500 feet of white and bur oak timber,

and athletic goods. Hickory billets are used in making ax and hammer handles and wagon spokes, while ash is manufactured into hoe, rake, and shovel handles as well as into baseball bats.

Generally speaking, chestnut and Eastern white cedar furnish the majority of the telephone, electric-light, and other pole timber. Poles usually are graded into three classes, according to their length, circumference measured six feet from the butt, and their top circumference. Defects looked for during inspection include crookedness, split tops and butts, sap and butt rot, and checks. The approximate weights of green chestnut poles range from 1,100 pounds for 30-foot poles to 9,120 pounds for 90-foot poles which are six feet in circumference six feet from the butt.

Forest experts report that piling is sold at a certain price per linear foot for specified dimensions and kinds of timber. Piling, according to its conditions—green or seasoned—and dependent on the kind of wood, ranges in weight from 300 pounds for 20-foot air-dry chestnut piling to 1,980 pounds for 50-foot green white oak piling. Piling specifications run about as follows:

"All piling shall be cut from sound, live

timber, of good quality, stripped of bark, and free from imperfections that would impair their strength or durability. The ties must be sawed or hewn smooth on two parallel faces, and the ends must be cut square. Pole ties are made of round timber on which are hewed two parallel faces, while square ties are hewed or sawed into rectangular shape. Ties are graded and classified according to the kind of wood and its durability, as well as by thickness and width of face.

STANDARD ties are from 8 to 8½ feet long, the better grade consisting of white oak, black walnut, black cherry, chestnut, sassafras, and red mulberry. The second grade includes such woods as red oak, beech, hickory, maple, sycamore, black gum, and elm. The prices paid in different sections of the country are very variable, dependent on the wood, size, grade, and general excellence of the ties offered.

Many different kinds of woods of various dimensions are suitable as timbers for use in mines. Usually mine props are circular, ranging from 4 to 14 inches in diameter, and being from 3 to 12 feet long, while lagging, which consists of round stuff about three inches in diameter and seven feet long, is used for the roof and side walls of the mines. Mine sills are 8 to 14 inches in diameter, while mine ties generally have four-inch faces and vary in length from 3 to 5 feet. Considerable rough lumber of various dimensions is also used in the mines.

Under the forest-products classification, any wood measured by the cord in the form of round or split sticks is called cordwood. Firewood generally is measured in standard cords of four-foot length, while materials for distillation, extract wood, excelsior, pulp, handles, cooperage, and woodenware also are frequently marketed by cord measure. The length ranges from 22 inches for heading material, to five feet for handles and extract stock.

The wise owner who has standing timber to sell carefully studies all the available markets before he disposes of his wood-lot crop. He consults with his neighbors who have recently sold timber or allied products, and he advises with his state forester of the Federal Forest Service, Washington, D. C., regarding reliable markets and prevailing prices.

If necessary, he employs some experienced expert to examine and estimate the amount and value of the timber, and to suggest the most profitable manner of marketing. For competitive purposes he gets bids from foreign as well as home buyers, and does not sell to local dealers until they

meet the best outside offers.

He always markets the higher grades of timber, instead of using them on the farm, where cheaper material will prove as serviceable and satisfactory. He finds it preferable to purchase and haul lower grade lumber to the farm than to sacrifice valuable material [CONTINUED ON PAGE 25]



Measuring the lumber in tree form in a wood lot and marking the trees ready for cutting

worth about \$1,500, was removed from the tract. The dealer realized a net return of approximately \$900 on this transaction. This case is typical of hundreds of others over the country where, through ignorance of the true value of their timber, owners have sacrificed stumpage to experienced buyers.

Under existent conditions timber may be sold on the stump or in the form of logs, bolts, billets, piling, railroad ties, poles, mine timbers, pulpwood, and cordwood. Logs usually are sold by size or grade, or in lot without classification. Selling "log run" usually is at the expense of the owner, who is not as well informed regarding timber lore as the average buyer. The grade of a log depends on the number and character of its defects, such as knots, rot, season checks, frost cracks, sun scald, wormholes, crooked grain, and similar qualities. Unfortunately, there are no standard specifications for log grades.

Bolts are short sections of logs, while billets are obtained by halving, quartering, or splitting or sawing bolts lengthwise. They are used for cooperage, excelsior, pails, tubs, handles, vehicle parts, pencils,

trees, of slow growth and firm grain, and free from ring-heart, wind shakes, decay, large or unsound knots, or any other defects that will impair their strength or durability. The tree shall be butt cut above the ground swell, and shall taper uniformly from the butt to tip. Piles shall be so straight that the line joining the centers of the ends will fall entirely within the pile, and that in the opinion of the inspector they can be subjected to hard driving without injury.

"No short or reverse bends will be allowed. Bark shall be peeled from the entire length of all piles, and all knots shall be trimmed close. No pile will be accepted with a top measuring less than six inches in diameter. The allowable diameter shall be: Butts of piles under 30 feet in length to be from 12 to 16 inches, and butts of piles from 30 to 50 feet in length to be from 12 to 18 inches."

The specifications for railroad ties in most cases call for sound



The farmer often may realize the maximum income from his timber by hiring a portable sawmill to convert the logs into marketable lumber

Why the Frog Croaks and the Toad is Silent

The mystery of the toadstool and the cutworm. How the latter caused a woodland calamity

By Frank A. Secord

Illustrations by Edwina Dumm



"Slime!" cried the frog. "You ugly toad, no fairy would smile upon you!"

IN THE woods at the edge of a marsh, one evening, there was a great gathering of birds and animals, for it had been announced everywhere that the fairy of the Milky Way was to come, as soon as the moon rose high enough, for a night of merry-making. Day birds went to bed early for a nap, so they would be able to stay awake during the fun; night birds got their suppers as soon as the shadows grew, so they could be on hand; animals came from the meadow, field, and stream; and so it happened that the fairy was greeted by a crowd of anxious friends, every one of whom considered it a great honor to be able to visit with the wonderful little lady who always had a nightingale for a guide and traveled on a moonbeam.

As soon as the nightingale's song was heard the marsh minstrels set up a serenade at a spot aglow with the light of thousands of fireflies, and necks were craned and legs were stretched so that the owners of them could see the coming of the wonderful fairy.

In those days, it is said, frogs and toads could talk as well as anybody, and a certain frog and a certain toad, who had been getting along badly together for some time, announced that they would try for the fairy's good graces.

"I shall make all the frogs of the world famous," the greenback fellow said to the toad, "because I am sure to please the fairy with my fine appearance. I have a soft voice and good manners. I shall make all the frogs famous."

"I," then spoke the toad, "shall surely outshine you, and win the good graces of the wonderful fairy, because I am a good talker, I have a plumper form than you, Frog, and my body does not resemble a chunk of green slime from the marsh!"

"SLIME!" cried the frog. "You ugly toad, no fairy would smile upon you! You look more like a big chunk of dirt than anything else! We shall see what we shall see!"

As the katydids, hoppers, and crickets sawed, treefrogs sang and bullfrogs boomed, Mr. Frog bowed low, rolled his eyes, and, in his softest voice, approached the fairy to ask for the first dance of the evening. He was in the midst of his speech when a murmur ran through the crowd, for it was discovered that there was no seat for the fairy, who stood, blushing and puzzled, not knowing which way to turn.

"A seat for the fairy!" hundreds of voices cried.

Mr. Frog paled.

"A seat for the fairy!" birds and animals

continued to demand, but everybody present was so ashamed and excited over the neglect that none could decide what to do.

Presently Mr. Toad bowed very low, brushed the frog to one side, and offered an arm to the fairy, saying as he did so:

"Good fairy, allow me to escort you to a seat that is worthy of your beautiful form!"

To the great disappointment of Mr. Frog, who stepped behind a tree to hide his shame, the fairy accepted Mr. Toad's arm, and together they walked to a spot some distance away, near a stump.

"I could have done that!" thought the Frog, peeking around the tree to see what was happening.

"I fear," the fairy said, when the stump was reached, "I shall not dare sit upon that. It is damp and dirty, and you know, Mr. Toad, my dress is dainty and will easily soil."

Mr. Frog began to smile to himself, for he felt that the toad was about to fail.

"My dear lady," Mr. Toad hastened to say, "I would not for worlds have you sit upon that stump. What I have to offer is something else."

Mr. Toad then made a few strange motions with his paws, rolled his eyes, and muttered some strange words that nobody had ever heard a toad or anybody else say up to that time. Greatly interested, the fairy watched what was going on, and finally the toad bowed until his nose touched the ground, and, as he rose, there popped out of the earth the first toadstool ever known—white, pearly, and soft!

"Be seated, lady!" Mr. Toad cried, and everybody within sight of the spot set up a great cheer—everybody excepting Mr. Frog.

THE moonlight glinted over the pearly toadstool, and the fairy of the Milky Way smiled sweetly upon her escort, who proudly stood at her side, happy as could be.

"It is plain that I shall have to give you the first dance," the fairy of the Milky Way told Mr. Toad then, and the audience approved.

Mr. Frog hopped away. He was angry and also disappointed enough to cry.

"I," said he, "am disgraced. Tomorrow it will be known that I failed and that the hated toad has won. Woe, woe!"

"Who speaks?" a tiny voice inquired, and Mr. Frog had to bend low to find out who asked the question. He found a little brown worm curled up among a lot of fallen flower stalks. The worm was busy at that moment sawing at a stem, and paused only long enough to hear what the frog had to say.

Mr. Frog, in his talk, mentioned the fairy, and when he finished speaking, the worm stood up straight and waved ten of his legs to show his excitement.

"The fairy of the Milky Way!" he shouted. "My, I would like to see her, but I could not crawl that far in a whole night!"

The frog and the worm talked a long while, after which, had anybody been looking, they might have seen the frog hopping toward the crowd in the woods, bearing upon his back the worm. The worm had promised to do something for the frog in return for the favor, and Mr. Frog promised that the worm would have a chance to see everything that was going on, after he did what the frog required.

Well, Mr. Toad was dancing with the fairy of the Milky Way; the marsh minstrel band was making the woods ring, and all

eyes were upon the lucky toad, so that nobody observed the frog as he approached the pearly toadstool; and when he was certain that none would see his act he dropped the worm to the ground.

The worm at once dug himself in, and after Mr. Frog hastily pawed some dirt over the hole he went, humming a tune, toward the dancers.

"You are happy for one who has lost the fairy's favor," chirped a whippoorwill.

"Oh, I am always happy!" the frog answered.

JUST then the music ceased, and Mr. Toad proudly escorted his companion to the stool near the stump.

As soon, however, as the fairy of the Milky Way sat upon the toadstool it fell over. She screamed, and rolled to the ground, while everybody near hurried to help the luckless lady to her feet. Her spider-woven dress was ruined, her hands were covered with mud, and her hair was mussed. In her eyes were tears, brought by the disgraceful thing which happened; and although Mr. Toad, excited and wringing his paws, sought in every way to comfort her, the fairy dismissed him with a frown.

"Away, Toad!" she cried. "You miserable fellow, to allow such a thing to happen to me!"

The nightingale escort of the fairy flapped his wings in despair and uttered a doleful cry.

"You must go home at once and change your dress!" cried the bird, but the fairy would have none of that. She scowled upon the toad and, although he tried to make apologies, she silenced him with these words:

"Toad, never speak another word until you can explain this disgraceful thing!"

The toad vowed then and there that he would obey, and that he would never

again make a sound with his mouth until he could explain. To this very day he is unable to say what happened, although the frog knew well enough that the cutworm which he brought to the woods cut the stem of the toadstool and caused the trouble.

Birds and butterflies brought dewdrops with which to wash the mud from the fairy, and after her dress had been repaired by some spiders present she ordered the music to begin anew and the frolic to continue.

"May I presume?" Mr. Frog inquired, offering an arm to the fairy, just as the katydids and crickets tuned up their fiddles.

"You may, and it is well that you didn't go away in a sulk!" the little lady replied.

And so it happened that Mr. Frog, after all, danced with the fairy.

Mr. Toad went away to hide himself. He had examined the toadstool; but, other than finding that the stem was broken, he could not explain how it happened.

NOW, Mr. Frog forgot all about the worm. He had promised to do that little fellow a favor, but as he was so greatly taken with the smiles of the little lady he knew nothing else.

Mr. Frog was gallantly parading through the crowd with the fairy on his arm, when suddenly a bush under which they paused for a moment toppled over, and the dew on its leaves splattered all over the fairy, drenching her. She turned in anger at the frog, as he jumped to one side to avoid being struck by the falling bush, and it appeared to everybody who saw, that the frog actually knocked the bush over.

"You clumsy fellow!" the fairy cried. "You are worse than the toad, with your blunders!"

The truth of the matter is, the cutworm was having his revenge for being forgotten and neglected. [CONTINUED ON PAGE 24]



"It is plain that I shall have to give you the first dance," the fairy of the Milky Way told Mr. Toad then, and the audience approved

Things You Can Plan Now for a Better Garden Next Year

STRAWBERRIES for home use are easy to grow if you handle them right. The main thing is to get good strong plants early in the fall, to insure a full crop of the best berries the first spring after planting. This in turn depends on getting full-grown crowns by the time the ground freezes in the fall.

For home use it is just as easy to grow the crop by what is known as the "hill" method as by the usual "matted row" system. The hill method consists simply of growing each plant separately, so that it makes a single big strong crown. Not as many berries are produced this way, but they are so much bigger and finer that the total yield is often greater than when the plants are allowed to make a mat of many small plants, formed by the rooting of the numerous runners.

In late June or early July go through the bed, and fork up the soil around some of the best plants. Then secure a quantity of three-inch pots. If you don't want to buy them, you might borrow them from a florist or market gardener, as there is little use for them at this time of year. Prepare a quantity of good rich garden soil and sifted manure. Bury the pots up to the rim, near the plants that have been selected, and fill them with prepared soil. Then, with a small stone or a clothespin, train a runner so that it will root in the pot. Pinch off the end of the runner so that it will stop growing. As soon as the new plant has started, cut the runner from the parent plant. After two weeks or so the pots may be taken up, and placed together in a frame, or in a corner of the vegetable garden, where they should be watered regularly. In this way they can be kept growing rapidly, and will soon make big strong plants that fill the pots with roots.

These plants, set out in late July or early August, with a handful of bone meal, or bone meal and tankage mixed, under each, will go right on growing, and form big strong crowns before freezing weather. Set them in rows about two feet apart, a foot apart in the rows. *Cut off all runners as soon as they start.* Cultivate often enough to keep the soil loose, as the plants should be kept making rapid growth. A little nitrate of soda, used as a top-dressing, a week or so after the plants have been set out, will help them along in great shape.

If there are many plants to care for, a piece of stovepipe, six inches or so in length, with one edge filed sharp, and fastened securely to two short upright handles, will make a good implement for cutting off the runners. When thrust down forcefully over the plant, it will cut off anything extending beyond the circle of its circumference.

Strawberries should not be mulched for

winter until the ground is frozen hard. I always secure bog hay for this purpose, soon after setting out the plants. Getting it at this time of the year, and keeping it under cover until I need it, I have it in perfect condition—dry, clean, and bright. Any good dry straw or hay will do for this purpose, and will insure plants that will give you big yields the following spring.

F. F. ROCKWELL.

Making the Most of Peonies

THE peony is again very popular, and it is a flower that gives full value for all we put into it. The great double blooms of all shades, from pure white to the darkest red, add to the loveliness of any garden. There is a very good market for the blooms in most places. It seems that hardly enough peonies are grown to supply the Decoration Day demand, although it is sometimes difficult to have them come in just right. But whether you sell them or not, you will never regret planting them, and September is the best month to do it.

One thing to remember is that the peony does not like to be disturbed. It is a very heavy feeder, and needs plenty of plant food to support the top and blooms of a good clump. So it is worth while to give the soil good preparation, as we will not want to move the plants for several years. I mix with the soil to a good depth plenty of well-rotted manure and a liberal amount of bone meal. Only well-rotted manure can be used, as fresh manure will burn the plants. This bed will serve the plants for several years. A top-dressing of manure and bone meal every spring will keep them at their best. The flowers from these will be much superior to half-starved clumps.

You can buy the divided clumps with three to five eyes, or the established clumps undivided. You get more varieties for your money by taking the divided, and in a year or two these will be nice clumps. Most of them will bloom nicely the first year if planted in the fall. This gives them all winter to get settled. They start growth early the next spring, and any disturbance then checks them severely. Spring-set plants seldom bloom. Often they do not make much growth the first season. The fall-planted roots make a good growth.

There are a great many varieties, but I have found few more beautiful than some of the old favorites. A high price does not necessarily mean the best flowers, for most of the old favorites are cheaper than the new introductions. If you could visit a peony farm it would be well worth the trip.



An overhead irrigation system like this will insure your garden against the hottest, driest weather. If you have an engine pump it is easily and inexpensively installed

How to Grow Hardy Plants from Seed

By Agnes Hilco

AUGUST, where the climate is such that a fair amount of rain can be expected during the fall months, is an ideal time to sow the seeds of such hardy plants as grass pinks, columbines, perennial larkspurs, foxgloves, pansies, sweet-williams, Shasta daisies, and many others. These will make a nice growth in the fall seed bed, and will bloom at the regular time next spring. The clumps will not be quite so large as those from seeds sown in May, but the May-sown plants will not bloom the first year, so there is not much gained by planting them. You can plant the fall-sown plants somewhat thicker, and in transplanting have more chance to cut out inferior plants.

Most of these plants like a loose mellow loam that will not pack or run. Woods soil with plenty of leaf mold is ideal. Sow the seeds in rows. Do not crowd the rows. The seeds should be covered not over a quarter to half an inch, and kept moist until up, which will take ten days to two weeks for most of the common varieties. Some are slower to germinate, and older seeds are

slower than fresh ones. Thin the plants in the rows if too thick, but a half-inch space will serve until transplanting time, except for such strong growers as hollyhocks.

The seed bed should be well cultivated to give the little plants a chance to make a good growth. As cold weather draws near, let them get pretty dry to harden them up. Water the bed well before giving protection, if it is not already moist. This mulch can be any coarse material, but evergreen boughs or tree leaves are probably best. Straw free from fine chaff will serve, or coarse hay. Anything that will pack will shut off too much air. A good water-tight roof should be placed over all. The bed should be high enough to secure good drainage. With the packing kept dry, there is little danger of winter-killing. I have kept them by turning an empty box over them, making the bottom of the box tight so it would shed the water.

A little care will make your plants thrive, and they will reward you with abundant bloom next spring and summer.

Hens Help in the Orchard

WE FIND that poultry in the farm orchard helps wonderfully in keeping down the curculios and codling moths; and that a flock of chickens, with a little assistance from light tilling, will preserve a dust mulch all summer long, and keep down most of the weeds. I don't believe in giving the farm flock too much range. Give them just about what they will keep cleaned up, and no more. With too much range the grass and weeds get ahead of them. Tall grass and weeds often go uncut in the rush of farm work, and this encourages nesting out, and also provides shelter for rats, weasels, and skunks that often make serious inroads on the flock.

Chickens like shade during the hot days, and the dusting places they make are nearly always in the shade. The other day I saw a flock of White Leghorns busily tearing to pieces an old straw pile under the trees of a farm orchard. Presumably the straw was full of noxious weed seed. The chickens had destroyed the weeds by their constant scratching. The trees bore a goodly number of apples, and seemed to be in the best of health in spite of last spring's freeze, which cut the crop short.

There is one disadvantage about an orchard for chickens: the crows and hawks have a good chance to work on the younger chickens. In this instance, however, the yards for the younger chicks had been fenced off on one side of the orchard, and various small retreats and hovers were placed at intervals in the more open enclosures. This afforded handy places of refuge when the hawks swooped down.

Most of the worms that infest the or-

chard fruits drop to the ground, and burrow into the soil to complete their change of shape and form. Some of them fall when the leaves blow down. Chickens love a bed of leaves to scratch in, and they will destroy most of the worms in their larva stages. Even if a codling moth should drop at night, and get below the surface before daybreak, the hens know the reward of scratching, and will often unearth him the next day. Chickens supplement the work of spraying to a great extent and, besides, render a good service in the cultivation of an orchard.

W. L. H.

Why Plums Don't Bear

AFREQUENT question asked is, "Why doesn't my plum tree bear? It blooms heavily each spring, but there is no fruit. Sometimes the fruits hang on for some time then all drop." The answer is, "Lack of pollination." None of our plums, including the Hansen hybrids and the Compass cherry, will bear if we have but one variety, unless there is some wild plums or our neighbor has a plum tree near us. Of course the only remedy is to plant other varieties. While waiting for these new trees to get old enough to bear, a blooming branch from another tree set in a pail of water under our tree will serve as a pollinizer.

A. F. YEAGER, N. D. Agricultural College.

Bee diseases cause a loss of over \$2,000,000 from the honey crop alone in the United States. The loss in bees and equipment is nearly as big.

Prize Contest Announcement for Farm Women

How I Earn Money for Myself on the Farm

ASURVEY of farm homes just made by the Department of Agriculture shows that eighty-one farm women out of every hundred take care of the poultry and eggs, but that less than half of these eighty-one get any of the cash therefrom for pin-money.

Also that thirty-three out of every hundred do the milking, eighty-eight wash the pails, sixty-five run the separators, and sixty do the churning. But only eleven out of every hundred get any of the milk-money for themselves.

We will pay \$10 for the best letter telling how you arranged with your husband to make your own money by sharing in the farm business, or by doing something yourself, such as raising chickens, selling butter, raising vegetables, flowers, etc. For the next best letters we will pay \$5, \$4, \$3, \$2, and \$1 each for all others that are accepted.

Give full details of your profit-sharing plan and how it works, but keep your letter to 500 words if possible. Clear photographs of yourself and farm will add to the value of your letter.

This contest closes August 31st. Enclose a stamped envelope if you want your letter back. Address Contest Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City. THE EDITOR.

What Kind of Power Plant Do You Need to Get the Best Results?

By Frederick W. Ives

Corresponding Editor, Farm and Fireside, Head of the Agricultural Engineering Department of Ohio State University, and Vice President of the American Society of Agricultural Engineers

EVERY farmer who has been in the game very long has sooner or later been confronted with the problem of more and cheaper power. Whether it is man power, animal power, or power derived from heat, the question of power always has and always will be a pressing one.

Man power is of course our most expensive form of energy, and the question of power in this case is to contrive machinery driven by other forms of energy, so that the man may put forth his energy in directing large units or units doing more than one man's work.

The size and kind of power plant will vary a great deal for different farmers, no two conditions being alike in all respects. For some it may be necessary and economical to have more than one power plant.

In the engineering world it is generally considered good economy to have the units of different size if the work is of a character that demands a light load over comparatively long periods, and a heavy load at other times. The reason is that a power unit will work most effectively when carrying somewhere near its rated load.

Applied to the farm, this principle would work out something after this fashion:

For plowing, threshing, silo-filling, grinding feed, and similar jobs, a large power unit is necessary, while for jobs like churning, pumping water, charging batteries, operating washing machines and grindstones a small unit will suffice.

The first-mentioned jobs will require a tractor, or at least a large power unit, and while this same large unit will do the second class of work, it is my opinion that it is neither good farming nor good engineering to use a tractor for this purpose.

AS a practical example of this principle I will cite the problem of a Midwestern farmer. He had, among other things, a pneumatic water-supply system the air compressor unit of which required approximately one horsepower. Then there was a type of milking machine that required about one and one-half horsepower. The wood saw, which was used several days each year, operated best at about six horsepower. There were other small power-driven units, such as corn sheller, washing machine, grindstone, etc.

A number of larger machines, such as a 10-inch feed grinder, a corn shredder, an ensilage cutter, required about 10 to 25 horsepower to operate effectively. Now, in addition to all this, he desired to light his buildings with electric lights.

A small electric plant of a size to handle economically his lighting problem, and to furnish current for his smaller power-driven units, such as the washing machine, grindstone and sheller, would not handle the air compressor and milking machine without serious strain on the batteries.

It was decided that the air compressor, the milking machine, and generator for charging the batteries might well be operated at the same time, the total load being about five horsepower. Therefore a kerosene-burning engine of a standard make was purchased. Since such an engine does not always operate at highest efficiency, and allowing for loss in belting and line shafts, a six-horse size was chosen.

The shaft to which all the machines mentioned were belted was extended through the wall of the powerhouse, so that the buzz saw for wood might be driven from it. The smaller units are all driven by motors of small size. This plant has been in operation for several years, and has proved a very satisfactory combination.

On this farm a tractor is used for all the larger machines as well as for plowing and fitting the ground. A number of horses do the lighter work, the tractor having replaced about three horses in doing the heavy drudgery. It might be said that the tractor is kept busy enough so that it is working between sixty and one hundred days each year.

Another power device on this farm is a windmill. By pumping water when the wind blows it furnishes enough for about

60 head of livestock. A storage tank large enough to hold two days' supply has made it necessary to use the house water supply for the barn only about five or six days each year. This useful and economical device has largely been displaced by the small gasoline-driven pump, largely for the reason that the wind did not blow every day. The remedy for this is to build a reservoir large enough to tide over the calm periods.

was set in motion, the feed slide opened, and the operator was free to go about his chores. The great drawback of this sort of power was that it was not portable, so that when the wood was sawed the poles were hauled to the barn, and the sawed wood then had to be taken to the house.

In regions where the wind may blow for a considerable portion of the year the windmill should be seriously considered as a

for power purposes. Again, if it is necessary to build a large dam, cover much valuable ground with water, and secure only a small return in power, the plant will not be economical.

Where water power is to be developed, and there is any doubt as to the quantity of water, it is well to make sure by measurements to determine exactly the amount of flow. The county engineer or the specialist from the state agricultural college can make the necessary measurements and calculations where one lacks confidence to do it himself.

Where the power is wanted for pumping water only, and a spring is conveniently located, the power of the stream may be utilized for forcing the spring water up to the buildings by means of the hydraulic ram. This simple device is very easy to care for, the only moving parts being the valves. Once started, it will run until the water stops or the valves become worn. This is perhaps the simplest power plant for a farmer.

Gravity flow is another good way to get water. If a spring is located on the side of a hill above the buildings, a pipe to conduct the water will prove to be a cheap method of securing a good water supply. The common mistake in this type of water supply is that of putting down too small a pipe. The friction of the water in a small pipe is so great that, if the pipe be long, but little water will flow.

WE NOW find many electric-power transmission lines throughout the country. Where these can be tapped, the farmer's power unit may resolve itself into a portable electric motor. One farmer in Ohio has two motors, one small and the other of 15-horsepower capacity. With the larger motor he has filled silo, ground feed, and other similar jobs. These motors are mounted on trucks, so as to be taken where the work is to be done.

The smaller of the motors is used for pumping water with a deep well pump of large capacity. Where the current may be had at 10 cents per kilowatt hour or less, electric power can compete very well with any other because of its convenience. Another striking advantage of the electric motor over the gasoline motor is that of its capability to carry a large overload for a short period. When a gasoline or oil motor is overloaded it stops.

To-day the small-unit electric lighting plant is attracting most of the attention in the farm power-plant line. So many good plants are on the market that I would be at a loss to pick out one. The standards of manufacture are so nearly alike that most any plant will do what any other will. Slight changes in the manner of assembling the motor, generator, and switchboard, and the methods of cooling the motor, are the only notable difference.

Storage-battery ratings are standardized, so that one battery is practically the same as any other of the same rating. For the most part, they are quite efficient, showing little loss in the current input and output.

The greatest danger in connection with the storage battery is that too large a load will damage the plates and shorten the useful life. The older and more experienced battery men now recommend that when such loads as flat-irons and half-horse motors are driven off the batteries the generator be operated at the same time.

It is possible to get light plants of several sizes. For heavy duty, where one proposes to operate a considerable number of appliances and also has a large number of lights, the larger sized plants will prove to be the best investment. The probable useful life of the average plant under the average conditions is about seven years, according to recent estimates.

If the plant is compelled to carry a heavy overload, it, or at least the battery, will not last two years. The tendency is always to overload rather than to underload the farm electric plant. First we will pump water with an automatic electrically driven pump, then Mother will be provided with a motor-driven washing machine. Father will [CONTINUED ON PAGE 36]



Photo from McMurry Photo Co.

These are only a few of the husky young veterans from Australia who are studying American methods of farming at the University of California

"Lots to Learn in America," Say Australians

WITH the whole world to choose from, Australia has come to America for the last word on farming and irrigation work.

At the close of the World War, ninety-seven picked veterans were chosen from the ranks of the Australian Army and sent to California where they are now working and studying on the experimental farm of the state university, near Davis.

"What we need is more intensive farming in Australia," says Captain E. H. Davis, who is in charge of the party. "We have done a little in the way of irrigation farming, but we realize that America has gone much farther in the actual application of water to the soil. We feel that we can learn better methods here, and are particularly interested in the work of leveling and ditching preliminary to planting as practiced here in California. One reason why we chose California is that the climates of Victoria and New South Wales, Australia, are very similar to that of the Sacramento Valley."

Along with irrigation, the men are making a rather extensive study of hog-raising, and expect to make it an important part in their plan for intensive farming. The growing of pork has been neglected in Australia, even though the demand is greater than the supply most of the time.

When they return to their homes this autumn, these soldier-farmers can, if they wish, take positions similar to that of a county agent in America, and, although they have been giving special attention to irrigation and hog-raising, will be able to help their neighbors out on many other farm problems.

R. D. D.

The example given above relates only to the conditions found on an individual farm, and is not general. It is given merely to show the method of thought to be followed in determining any problem. Not all farms have the amount of equipment found on this one. Some may have more. Some farmers are located near a large power-transmission line that may be drawn upon for a reasonable cost. Some farmers have a stream capable of development. Others are situated so that natural gas is available for both power and light.

ONE farmer in our neighborhood used a windmill for years for doing all the power and pumping work on his farm. While its ultimate fate was one similar to that undergone by many others, that of being wrecked in a high windstorm, yet it was a fairly satisfactory power plant.

This mill was located on a large barn. It was attached to a large mast that was in turn bolted to the barn frame. This mill was used to grind feed, run a straw and fodder cutter, a wood saw, and pumped the water for a considerable herd.

In order to make feed-grinding automatic, the grain to be ground was elevated to a bin above the grinder, and when ground run to a bin beneath. The grinder

prime mover. Its chief advantage lies in the fact that it is not dependent upon fuel. It is independent of strikes, slow transportation, or faulty ignition systems.

Aside from the disadvantage of occasionally being damaged by heavy wind, the drawbacks are that of danger in lubrication, or rather, applying the lubricant, the unsteady motion in high winds, and the lack of positive control. The utilization of wind power would seem to me to be one of our greatest possible means for fuel conservation. As a source of energy its possibilities have hardly been tried.

In some regions water power is available with but little expenditure of money. Particularly in any of the hillier sections is this true. A rapidly falling stream fed by springs having a fairly constant flow throughout the year will supply power if properly harnessed. The one thing that is necessary in most cases, and one that is usually overlooked, is that of sufficient volume of water.

THE power derived from a fall of water depends upon two things: the distance through which the water falls, and the weight of the falling water per minute. While the distance may be great, the quantity may be so small as not to be available

Don't Envy a Good Cook—Be One!

They're Made, Not Born

By Nell B. Nichols

Household Corresponding Editor of Farm and Fireside



A spoonful of any liquid is all the spoon will hold

FORTUNATELY for you and me good cooks are made, not born. To be sure, you know women who have always been able to add a pinch of this, a handful of that, and a speck of some other ingredient and produce the best cake you have ever eaten. So do I. And, of course, you ask how to account for the ability of these housewives if they don't have the God-given gift of cooking well.

To discover the answer let's go back and ask the most successful cooks in the neighborhood to talk about their first days of housekeeping. Let's try to persuade them to tell the story of those times when they, too, had failures in their kitchens. Perhaps it was the cake which fell while the first company were waiting for dinner or the doughnuts that on one special occasion were not fried inside, or was it the soggy bread that caused tears? If the confession is made, nine out of every ten cooks who are supposed to have been born with a silver spoon in their mouths admit that they were not successful in cooking until they had practice.

There are two ways to learn to be successful in culinary work: one is to study the lessons of the oldest of all teachers, experience; the other is to accept cookery as an exact science. If the latter method is followed, any person can become a good cook, provided she does not ignore the specific directions given in good recipes.

WHICH way will you learn to cook or, if you already know, which method do you want your daughter to follow? Suppose you decide experience is the best guide. Very well, we shall see. Good cooks, to whom we refer frequently as having been born with the power to prepare foods exceptionally well, judge the amount of foodstuffs they use in making puddings and cakes, for instance, with their eye. I envy them in the ability they have. But couldn't most women cultivate this same scrutinizing glance which tells them when the batter is too thick and when enough sugar has been added?

But before one achieves success in being able to judge amounts accurately, there must be many trials made and, naturally, many failures, discouraging moments, and waste of food. When the cake contains too much soda, not enough sugar, and falls, there is little chance of its being eaten, and the scraps are usually fed to the chickens. Looking over the last lists of groceries which you have bought brings home the lesson that thrift is as vital as it was during the war. Aviating prices make it imperative that no food be wasted. So learning to cook by training the eye through experience only is a costly method to use.

On the other hand, learning to cook by following good recipes, and measuring accurately, assures success. Of course, painstaking care is essential. The flour, baking powder, lard—all must be measured carefully. But just as the person measures the size of the room in computing the amount of paper needed to cover the walls to avoid waste, so needs the housewife to measure the ingredients she is using when following recipes that she may secure the results the recipe promises. It's economical to cook by measuring unless the eye is already trained by long years of experience. And, more than that, every girl, woman, and man can cook well if they measure and combine foods properly.

Picture the cook trained by experience telling the young bride how to make the drop cookies which have made her cooky jar famous beyond the boundaries of the neighborhood.

"Add enough sugar to make the dough sweet enough, but be careful not to get it too sweet. Then stir in flour so it will be stiff. But do take care, my dear, not to get it too stiff, or it won't drop from the spoon into the baking pan as it should."

The explanation is finished. The attentive listener wears a bewildered expression. Perhaps she is wishing that she, too, might be able to cook well. But she says little. What is there to say? A few words acknowledging her fear that she may never be able to make good cookies are spoken. And then she dismisses the discussion, envying the woman whom she believes to have been given an especial ability to prepare foods well.

How different this way of teaching is from that used by the housewife who follows recipes, measuring accurately. She can tell the young woman how much of the different ingredients to use, how to combine and cook them. It is a set of rules which she gives, and the carrying out of them is the part left to the one who is going to cook in this way.

Skillful Measuring Not Difficult

To measure accurately the housewife needs a few utensils which are designed for this purpose. Nothing elaborate or expensive is required. In fact, I have a few measuring tools in my kitchen which I use daily; I consider them essential in the preparation of my meals. First of all are the measuring cups. Two are sufficient, although four are frequently helpful. One is of glass; it holds one cupful or one-half pint. It is graduated, and one can measure one fourth, one half, and three fourths of a cupful accurately with it.

Glass measuring cups have an advantage over other kinds in that their transparency permits one to see when the half-cupful line is reached. Metal measuring cups are very substantial, and I believe every household needs a one-quart aluminum measuring cup. These measuring cups vary in price, of course, but are inexpensive in most shops.

THESE pictures were taken in Mrs. Nichols' kitchen at her home in Topeka, Kansas, and it is Mrs. Nichols herself that you see in the picture.

Every recipe printed in FARM AND FIRESIDE is tested in this kitchen before it is printed in the magazine. This is, we believe, a service unique among farm publications.

Also, Mrs. Nichols will gladly answer household questions for FARM AND FIRESIDE women-folk. THE EDITOR.

In my store there is a complete line ranging from 15 to 35 cents.

Spoons for measuring also help to insure accuracy. I have a trio of spoons fastened together by a ring; they are useful. They hold one-fourth, one-half, and one teaspoonful. They may be purchased from 10 to 20 cents.

Why have them? That is what the housewife asks before making any purchase. Take the cups, for example: When a recipe calls for a cup of some ingredient, it means one half of a pint. Few teacups hold exactly this much. In fact, they vary greatly in size. If I test a recipe calling for four cups of milk and use the kind of teacups which are on one of my cupboard shelves, they are very large. I have no assurance that the neighbor to whom I pass on the recipe will do the same, for her cups may be small. As a result she does not get enough milk in the cake batter, and she wonders whether I can cook because I had told her the recipe was excellent.

What woman feels happy when it is intimated that she can't cook, at least bake a cake? When a recipe calls for a cup of any food ingredient, the best way to be sure one is using that much is to measure with a graduated measuring cup. The same is true about spoons; they vary in size, but not so much as cups. However, the bowls of measuring spoons are round, so when the spoonful is divided into fourths, for instance, there will be no mistake made as there is when the ordinary spoon is used, for the tip is narrower than the handle end. Scales are helpful also. Frequently recipes give the weight of materials which cannot be given well otherwise. A straight-edged knife, called the spatula, is useful, and then the ordinary vegetable knife comes in handy. A speck of material is the amount which can be held on the tip of a vegetable knife.

After one has these appliances, they are useless unless they are used properly. The most important precaution which must be heeded at all times is that unless otherwise specified, the measurements are level.

When one teaspoonful of baking powder is needed, it is one spoonful leveled, not heaping. In measuring dry ingredients, such as flour, spices, soda, and sugar, some of the material is taken on the spoon and then

Flour or any other powdered material is piled lightly into the cup and then leveled. And a level cupful of any dry ingredient is obtained by using a straight-edged knife to push off the material until it is level with the top of the cup



When one teaspoonful of baking powder is needed, it is one spoonful leveled, not heaping. In measuring dry ingredients, such as flour, spices, soda, and sugar, some of the material is taken on the spoon and then

the blade of a straight-edged knife, the spatula, is used to push off sufficient material to obtain a level surface. If one does not have the measuring spoons, and needs one-half teaspoonful, the spoonful of the ingredient is divided lengthwise with a pointed vegetable knife; it should not be divided crosswise, as the tip of the bowl of the spoon is usually very narrow. One-fourth teaspoonful is most accurately secured with the measuring spoons, of course, but when they are not available the spoonful is divided into halves lengthwise, and one half is removed. Then the remaining half is divided crosswise, the line of division being a little nearer the handle end of the bowl than the tip.



Butter or any other solid fat is measured by being packed firmly in the measuring utensil. Then it is leveled with a knife

the blade of a straight-edged knife, the spatula, is used to push off sufficient material to obtain a level surface.

When the powders such as flour are measured care is needed that they not be pressed down. If one is measuring a cupful, the material is piled lightly into the cup with a tablespoon and then leveled off with a spatula or knife. Flour is always sifted once before being measured.

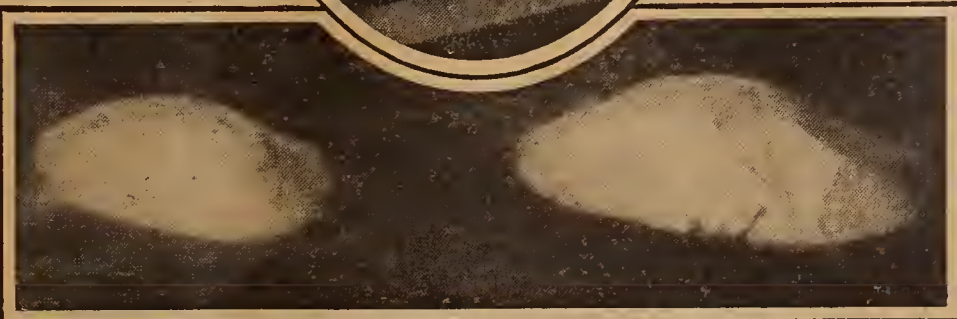
A CUP or a spoon of liquid is all that the cup or spoon will hold. In measuring butter, lard, or any other solid fat, it is packed down tightly with a spoon and then made level with a knife. If one-half cup of fat is needed, or any part of a cupful, as far as that is concerned, it is easier to measure it by tablespoonful, remembering that sixteen tablespoonfuls are equal to a cupful. When a few tablespoonfuls are needed, they may be measured by teaspoons if one desires, for three teaspoons hold the same amount as does one tablespoon.

Recipes frequently give definite information as to how the materials are combined. Perhaps the most familiar term is stirring. Stirring is a circular motion used to combine the wet and dry ingredients in a recipe, and to keep the food from sticking and burning while cooking. Beating is an over and over motion which introduces air and makes mixtures smooth. Cutting is a horizontal motion with knives used for combining shortening and dry materials without blending them. Cutting and folding is a combination of the two movements—cutting vertically through the mixture and turning over and over by sliding the spoon across the bottom of the mixing bowl each turn.

Magazines are Taking the Lead

The recipes in the best cookbooks and the leading magazines are specific in that the measurements are level, and they are taken in the same way. Unless women using these recipes take the measurements likewise and follow the directions closely, they cannot expect to achieve best results.

And magazines, by the way, have assumed a leadership in putting new recipes before the women. There was a day when every housewife relied on the old cookbook on the pantry shelf to furnish inspiration and information for attractive meals. The cookbook is still a part of the equipment in the kitchen, of course, but its popularity is decreasing because it cannot keep up with the times as does the magazine which is printed monthly. Foods which are plentiful this season, and can be used abundantly and economically in recipes, may be out of the pocketbook's reach a year from now. In fact, they may not be found on the market in any form. As an example, [CONTINUED ON PAGE 31]



Graphic proof that there is a difference in the heaping and level measurements. The smaller pile contains twelve level tablespoons of sugar; the larger pile contains twelve heaping tablespoons

Ruth and Romance

The story of a girl who felt the need of adventure, and went eagerly to meet it when it came her way

By Ethel Chapman Haring

Illustrated by Norman Price

FROM her sheltered corner of the hotel porch commanding the finest view of the glacier and its surrounding peaks, Ruth Goodnow lamented that romance had passed her by. Here she was, engaged, almost married, and in all her comfortable life she had experienced not one real adventure to look back upon with a thrill.

Her fiancé was a serious-thinking, slow-moving man of thirty, as safe as a government bond and just about as exciting. His very name, Hiram Babbitt, was unromantic. Babbitt was well enough, to those who knew the excellent family it indicated, but Hiram! Not everyone was aware that he had received it in honor of the grandfather who had laid the foundation of the family fortunes by manufacturing automobile tires—Hiram, King of Tires, he was facetiously known to the automobile world. Most of the younger Hiram's energy went into the inherited business, which returned him interest as a good business should; the rest was spent in a mild and steady devotion to herself. He took her to symphony concerts and to New York plays which came to town with the original casts. To quite half of these entertainments his mother and hers accompanied them—as on the present holiday journey.

Adventure just didn't connect with Hiram. Not even the war could bring it. To do him justice, he had tried his best to get into the service, but his nice blue eyes were of no particular use to see with, and he had been rejected for the officers' training camp and the National Army.

Of course, Ruth loved him. But like every other woman in the world, she had come of cave-dwelling ancestors, and an old ghost of cave-day memories flickered at the back of her brain and had not yet been laid by an experience with what she thought she craved. She wanted her man to be more cave-manly. She did not consider that cave-age conditions are seldom met with in civilized life, that cave-man characteristics would hardly qualify Hiram to conduct the business which made their financial prospects so pleasant. Least of all did she consider what a very poor consort she herself would make for a cave man. But she was just as unhappy as if her discontent had sprung from some valid cause, and as her wedding day approached, this lurking sense of disadvantage grew.

SHE looked past the hotel gardens to the old bed of the great ice river whose melting body became the white stream issuing from the bluish mouth of the glacier which yawned a mile up the rock-strewn valley. Just opposite, the mountain sides were rich with the spring verdure which comes late in the Canadian Rockies. Next above was the sentinel strip of dead overgreen. Above the timber line, vast and dazzling from a recent snowfall, lay the source of the ice tongue crawling slowly down. Highest of all, the mountain tops of brown splintered rock pierced the blue. Here and there, bursting like a white, tangled plume from a green velvet cloak, foamed a mountain brook, snow-fed.

Adventure ought to develop in an atmosphere like this, but it wouldn't. They had been at the hotel a day and had taken the usual walks; another day and they would have taken the usual drives and finished the place. That was the way things happened when Hiram managed them. He was bargaining now with the bandit who owned the livery privilege for a rig to be used that afternoon. The conveyance would be the best obtainable and the driver the safest. They would return agreeably hungry, in plenty of time for dinner. . . . She hoped he would get back in time for the event of the hotel day, the single train from the States which brought most of the tourists. She looked at her wrist watch. Goodness, it had stopped again! Still, it was a pretty ornament, and Ruth was not the girl to discard a decorative watch merely because it refused to run.

A faint whistle was tossed back and forth by the mountainsides, and a toy train curved into sight. At Ruth's elbow

a well-dressed woman who had frequently consulted a little crystal watch for the last quarter hour leveled a tortoise lorgnette at the tugging train. Ruth made a mental note to get a collar-and-cuff set like hers for that apple-green silk of her trousseau.

The customary group of tourists detained. Part of these, after bustling past to register at the office, took a hasty glance at the glacier from the porch, and, apparently deciding that it would wait, went to their rooms to follow its example. The rest, nervously determined to make the most of every minute, immediately hurried

in one quick and comprehensive glance. "Slick spot. Know anybody here? If so, for heaven's love save my life by introducing me. It seems a thousand years since I saw a real girl."

The mother followed his eyes dotingly, while Ruth strove to look unconscious.

"There's only one really nice-looking girl at the hotel," she murmured, "and I haven't met her. But—"

"Well, by all that's lucky!" her son interrupted her, staring now beyond Ruth and striding in her direction. "Excuse me, Mother—if there's not Hiram, King of

ance as his high forehead and benign expression contrasted with the aggressive nose and snapping dark eyes of the other. The two were Reason and Romance. And it is a pathetic truth that while Reason has its points, picturesqueness is not one of them.

"Our mothers are resting for the drive this afternoon. I've just arranged for a buckboard to call at three to take us to Inspiration Point and the Lakes in the Clouds."

The other permitted his admiration for Ruth to become perfectly open.

"Well, she'd need two chaperons—both of them mothers—if I were engaged to her," he said. He regarded Hiram's mild, spectacled eyes with a twinkle in his own. "But the situation puts me out of luck. Mother's not up to walking, and I had Miss Goodnow all copped out for a tramp and the trip to the glacier this afternoon. I hadn't met her yet, but she looked good to me, and that could have been arranged. Another dream dashed!" and he wrinkled his pugnacious nose humorously.

"Not necessarily," said Hiram with cordiality. "Of course, she's seen the glacier once, but she might prefer seeing it twice to going to drive. Glaciers are rarer than mountain lakes. If Mrs. Hastings isn't a good walker, she could take Ruth's place in the buckboard."

Both men looked at Ruth.

"Having your lord's permission, will you go with me?" asked Hastings, his black eyes snapping.

And Ruth, looking from one to the other, accepted with thumping heart—the adventure at last!

HASTINGS was to spend an hour with his mother after luncheon, and as Ruth dressed leisurely she reflected that Mr. Hastings would never permit his fiancée—though he probably hadn't one, or he would have gone to her instead of coming to his mother—to go tramping off with a man who warned him that she would need "two chaperons, both of them mothers," if he were engaged to her. Of course, she was glad Hiram hadn't been horrid; yet it was hardly flattering to be handed over cold-bloodedly to a stranger, even if his father had been in automobile springs. He was so good-looking, too—tall and broad-shouldered; and he carried his head up as if he challenged adventure. Ruth hoped it wasn't disloyal to Hiram to think that adventure would be likely to answer the call if she was a woman.

Her last look into the mirror was reassuring. Ruth's sport clothes were always of a sort to be irretrievably ruined by a speck of dust or an instant's real exertion, and, except for a rose-striped sweater, she was in spotless white from the bead-banded hat to the doeskin ties on her trim feet; her color was high with anticipation.

When she reached the hotel porch, Hiram was just tucking the three mothers up in the livery buckboard. The eyes of all four looked approval of the girl at Hastings' side.

"You're sure you're equal to the trip?" Hiram came back to ask. "You got pretty tired walking to the glacier and back yesterday."

"I could walk to the peak and back today."

This was rather a flight of fancy, for Ruth never walked four blocks if she could possibly ride, but Hiram accepted it.

"Well, but you'd better take a coat if you're going to be out after five," he advised as he returned to the vehicle.

"Oh, I'll be warm enough, Hiram," she replied a little impatiently. He didn't need to be too possessive. "We're walking, not riding."

She was not entirely pleased, either, when her mother said, "It is pride, not clothes, Hiram dear, that keeps girls warm," though Hastings' burst of laughter made her smile even at her own expense.

"I'll take good care of her. It's a talent of mine. Come on, Miss Goodnow," and, waving his cap as the buckboard got under way, he called [CONTINUED ON PAGE 26]



They at last reached the mouth of the great glacier

out to get a line on the place before the noon meal.

All but one. A stalwart young man dropped his Gladstone bag on the grass and with a flying leap cleared the porch railing, and landed at the side of the robust matron with the lorgnette.

"Teddy!" she cried, and submitted with ecstasy to his embraces.

"Good old girl!" the man exclaimed in a big, out-of-doors bass. "The Forestry Department gave me five days off, and I found that if I traveled four of 'em I could connect with your itinerary. And it was so long since I'd seen anything from Broadway—even a parent—that I took the hop. You must have got my wire."

He patted her back in filial fashion, looking over it the while at Ruth, who turned away with a blush at being caught looking and listening, and then set her down gently but definitely in the steamer chair from which she had risen. Then he included the glacier, the peaks, the valley and the bystanders—particularly Ruth—

Tires!" and reaching out his brown hand he grasped that of Ruth's fiancé, who had just come around the corner.

It appeared that Hiram's firm had had mutually satisfactory dealings with the young man's father, in whose office they had often met before Hastings had found the city too stifling and had "taken to the woods."

"I wanted to get out and buck up against nature. Well, I've had my wish. Mother, the third generation of tire kings, Hiram Babbitt; Mr. Babbitt, Mrs. Theodore Hastings of New York."

Mrs. Hastings smiled with elderly coquetry, and Hiram beamed and introduced both strangers to "Miss Goodnow, my fiancée."

Hastings acknowledged the introduction with a rueful laugh.

"Fiancée? Lucky man! Wish I had one here! There are more of your party, then?"

Hiram nodded. His even reply contrasted with Hastings' impetuous exuber-

How We Helped 9,000 Farmers Get Small Loans for Working Capital

By M. W. Cole

New York farmer and president and organizer of the Farmers' Fund, Incorporated, Rochester, New York

I NOTICE that in a recent issue of FARM AND FIRESIDE a banker-farmer says that the lack of capital has caused more farmers to fail than any other thing. I think that is so; and I want to tell you how we have made it easy for New York farmers to get needed working capital, in both large and small amounts.

Our Farmers' Fund, incorporated, has made it possible for almost any New York farmer to get a loan for working capital at a fair interest rate. Started as a war measure to help stimulate food production, the Patriotic Farmers' Fund loaned over \$900,000 to nearly 9,000 farmers during the war. This money increased their crops by about \$5,000,000. The average loan was for \$100, and for every dollar of borrowed money expended for seed, fertilizer, or labor these farmers received \$6 in increased yields of farm crops.

What we have done in New York can be duplicated in any other State. The business of farming is the same everywhere, and New York farmers are no more honest than farmers in any other section. You can have the same sort of banking service in your locality if enough of you unite to show the bankers that you need it, and that it is a profitable enterprise for the investor as well as the farmer. Better yet, a similar organization can be built and operated co-operatively by farmers themselves.

In the past it has been very hard for we farmers to get needed working capital on long-time loans from country banks. This condition still prevails in many localities. There is plenty of money available for long-time loans. But what is needed is a form of loan that will furnish working capital on a nine months' or a yearly basis instead of on short-time notes, as has been the practice.

The farming business demands a long-time loan because it takes time for a crop to grow into money and for livestock to be fattened and marketed.

The Farmers' Fund provides such a service, and during the last year has loaned over \$600,000 to New York farmers in amounts that average \$400. We let all kinds of farmers have this money on almost no security except our belief in their honesty and ability to make good. We have found very few dead beats, and have proved that such a credit system is sound and profitable. Our interest rates are low, running from 5 to 8 per cent. The larger loans bear a lower rate of interest.

GETTING a loan from the Farmers' Fund is simple. We have agent banks in practically every county in the State. The farmer files with the nearest agent bank an application for a loan and a financial statement showing what he is worth and how he expects to use the money. The local loan committee acts on his application and, if they think he is good, make arrangements with the central office for him to get the money. Often it happens that the local bank decides to make the loan itself, and we never hear from the borrower. Either way, he gets the money needed to plant his crops or to buy livestock or machinery.

I want to say before I start telling the story of how the Farmers' Fund has helped New York farmers that I am not a banker. I am first of all a farmer, and I believe that our success has been due to the fact that we understood and adopted a sympathetic attitude toward the farmer.

I was in Washington on business a few days after war was declared, and happened to meet Mr. William Church Osborn. He knew of my connection with agriculture, and said: "What are we going to do to get more food?"

I replied: "Give us money and we'll make the machine hum."

We went up to Mr. Osborn's room and drew a plan of loaning money on unendorsed notes. The New York State Grange executive committee gave me blanket authority to appoint in every grange a committee of three to pass on every application; and where there were no granges I got the banks to do it.

We started with \$200,000, which was

furnished by Mr. Osborn and other New York men. I wrote letters to all the masters of the subordinate granges to appoint a committee of two farmers and one business man. Approval of any two would be sufficient to lend a man money.

The county bankers' reception of this plan was amusing. Most of them took the attitude that if any fool in New York wanted to give away his money, all right; they'd take their share. The best guess was that we would get back 70 per cent of the original sum. April 28, 1917, just twenty-one days after the machine was built, we made the first loan. She was leaking gas in every cylinder, but she was moving.

What percentage of all this money was paid back? One hundred cents on the dollar, counting interest. The dead beats ate up the interest the first year. The overhead of the Fund



M. W. Cole

The Hired Dollar

MEN who boldly bargain for *man* labor cringe at hiring *dollar* labor. Debt looms up to them as a monstrous evil forever set in wait for them. They fail to realize that the power of debt can work as mightily for a man as it can against him. More men have risen by debt than have fallen through it.

Debt carrying disaster in its wake does so in the vast majority of cases for just one of two reasons: either the man who borrows goes too far beyond his depth, or he secures the money to hazard it in some enterprise in which he is not thoroughly versed.

If a man operating a farm cannot make, year in and year out, enough to allow himself a margin beyond the interest on the money invested, he is ill-fitted to his business; for it is this extra margin that presents his worth as a *man*. Failing to secure this compensation for his personal services, he would be far better off to turn the value of his land and equipment into interest-bearing paper and then hire himself out for wages.

On the other hand, if he is capable of making a good profit beyond the interest on his invested capital, as most farmers are, he is wise if he by judicious borrowing secures additional capital, thus placing himself in a position to operate a larger business.

Few men mount to positions which in size match their full capacity. It is doubtful that there exists a man who has not the ability to manage a business a trifle larger than the one he heads, provided of course he has made some measure of success.

One Middle West farmer of large acres thinks that the stumbling block of so many farmers is that they have the wrong goal. They make it their aim to get out of debt. Once they have taken the icy plunge they harass themselves until with heart-breaking sacrifice they have paid off every dollar. He believes they should increase their debt as rapidly as they can with sound judgment.

The man who is courted by the banker is the man who borrows, not because he is a prospective victim of the foreclosing mortgage, but because the intelligent heavy borrower is usually a big money maker. GEORGE PEAK.

was carried personally by the big men interested. Counting the old accounts that are coming in now, we really paid expenses and got one hundred cents on the dollar. All we lost was the interest.

Here are two letters from borrowers to show how the plan has worked out:

"DEAR SIR: Please find enclosed check to pay note and interest on \$598, which I borrowed from you last fall. I am very glad to be able to borrow of your funds."

"I went in debt to the extent of \$1,296 on a tractor and tools, and will pay for it almost outside of my regular business as conducted before I got tractor, and outfit is nearly as good as new."

"I hope the Farmers' Fund will grow into more usefulness. But for it I would be without a tractor still, for which I am very thankful."

Here is a man who made \$75 by borrowing \$50, and yet he apologizes for it:

"DEAR SIR: In regard to paying your note for \$50, this note was paid when due. I am enclosing canceled note so you may see for yourself."

"I am ashamed of myself for not writing you and thanking you for the loan. I

bought seven pigs last spring and raised them all, and this fall they dressed 1,300 pounds of pork."

"I had to buy everything they ate, so you can see there was not much profit, only about \$75. That wasn't bad considering the price of grain. I hope you will pardon me for not writing before."

The first year we loaned \$273,000.

We then decided to advertise.

The second year we loaned about \$800,000. When we started early and loaned on wheat and livestock, the loans took on a yearly rather than a seasonal character.

The second year's work was a repetition of the first, and a perfecting of the machine. The bankers had elements of strength and prominence that the farmers didn't have. So we gave the banks power to select the loan committees with the approval of the farmers' committee.

deprived of the privilege. The fellows we have had to be severe with were always those who had never before been approached on such things.

When we started, we wanted to make the thing altruistic. We loaned at 4½ per cent. This made trouble, so we boosted the rate to six per cent, but allowed the banks one per cent, so that we got five per cent net for our money. The banks get customers, for they can persuade men who borrow from the Fund to open an account, without its looking as if they were trying to loan money and keep it too. One bank said that 70 per cent of our borrowers have opened accounts, and that they are keeping them up.

Business men said: "You never can get this rate of interest." On a small loan it amounts to about eight per cent. We discount in advance, and deduct an appraisal fee to cover overhead. But the farmers had such confidence in us that we got the business.

We loan only 80 per cent of the value of livestock or tools purchased. On anything else we loan 100 per cent. The 20 per cent represents depreciation and a credit risk. Loans for over \$300 must be secured by chattel mortgage. If a banker vouches for a man, however, we sometimes waive the chattel mortgage.

The maximum loan under existing laws is \$5,000. In our first two years' business the maximum was \$700; the average was \$100. It shows that there were 9,000 farmers in New York State who needed \$100. How many are there in your State?

UNDER the new system we have loaned about \$638,571.85. The average loan will run about \$400. We reorganized in May, 1919. We are never divorced from the \$300 fellow, because we let him have money without much security except character, although at a little higher rate. The bigger and safer fellow gets a lower interest rate. We are no longer philanthropic.

In the year 1917 there was a demand for small, short-term crop loans. By extending this series of loans over every county in the State, we reduced the loss from natural causes to an absolute minimum. We also insured by this system the renewed interest in agriculture by a submerged tenth of the farm population—the fermenting tenth, I call them.

These two services are worth-while. They would never have come to the attention of moneyed people in this State in many years, except for the Farmers' Fund. There are certain underlying laws of credit and business of farming that can be applied in any section.

You can talk "improved farm methods" until you are black in the face, and hope for improved living conditions; but you'll never get anywhere until you know how to finance the improvements. Before you improve somebody's farming methods, you ought to know if he is a *good enough business man* to pay for the improvements. Stricter business methods is the only thing that will improve farming.

The Farmers' Fund has encouraged intelligent, individual effort, not group effort or group credit. I didn't start to invent a credit machine. I started to make two blades of grass grow by putting money up to buy the seed. I hope to show that we can get ahead and carry on this business up to any sane amount, and pay 4 or 5 per cent to investors. In an exceptional year we may pay more than that.

Farmers have begun to realize that if they keep one pig and five ewes on their farms, by doubling the number of animals they don't double their overhead. Instead, they reduce the unit of cost. We are going to demonstrate that if a farmer is able to farm 60 acres without help he can farm at least 90 acres with no greater overhead except labor. And we propose to supply New York farmers the money with which to do just that. The same plan will work in your State, and if there is anything I can do to help you establish it, write me.

We must either wear out or rust out—every one of us. My choice is to wear out.—THEODORE ROOSEVELT.

How One Missouri Club Raises Dairy Calves Profitably

By A. A. Jeffrey

BEFORE the organization of the first calf club in Pettis County, Missouri, County Agent Long, on a small scale, tested a plan to wean calves by hand. With the help of his son, Howard, and using the family cow and baby calves, bought in his travels over the county, he found it practicable to take calves two weeks old and raise them by hand with no more than one gallon of skim milk a day. By supplementing the skim milk with a gradually increasing ration of ground feeds it was possible to discontinue the milk entirely at the end of six weeks, and then buy more calves to dispose of the surplus milk.

Thus it happened that the ten-year-old son of County Agent Long, with ground feeds and the surplus skim milk from the family cow, actually raised 11 Holstein heifer calves in less than ten months—between June 11th and April 26th of the following year. Ground feeds used were cornmeal, shorts, oilmeal, and bloodmeal in equal parts, supplemented by clover hay and blue-grass pasture, in season. The feeds and feeding schedule were under the supervision of Mr. Long himself, but the boy did all the feeding, haying, and handling of the calves.

The shorts, cornmeal, oilmeal, and bloodmeal were thoroughly mixed—in equal parts in warm water. Shelled corn also was fed. This is the feeding schedule as followed in this experiment, and adapted later to the work of the boys' and girls' calf clubs organized by Mr. Long. (Skim milk is given in pounds, calf meal in standard one-half pint measuring cups, and shelled corn in the same measure. The figures denote amount fed daily—divided into two feeds. The shelled corn was fed dry in separate vessels after the wet feeds were cleaned up.):

Calf's Age in days	Skim Milk in lbs.	Calf Meal in cups	Shelled Corn in cups
20 to 30	8	1 1/2	1/2
30 to 40	8	1	1
40 to 50	5	1	1
50 to 60	3	2 1/2	1 1/2
60 to 70	0	3 1/2	2 1/2
70 to 80	0	3 1/2	3 1/2
80 to 90	0	4	3 1/2
90 to 120	0	4 1/2	4
120 to 140	0	5	5
140 to 190	0	5 1/2	6

Added to these measured feeds, clover or alfalfa was given in whatever quantity they would clean up daily. Fresh water was always kept within their reach.

At the time this was done, purebred and grade Holstein baby heifers could be bought locally for \$5 to \$10 each. The feed costs up to six months of age added \$12 a head more to the cost price. All of the 11 heifers thus raised by the Longs in one year were sold at sums averaging \$50 each. In the subsequent work of the calf clubs, even with feeds much more expensive, and with purebred heifers bought from Wisconsin at \$20 each at two weeks of age, many Pettis County boys have made as much as \$40 profit per calf in a year's feeding.

In three years of this kind of work, Mr. Long has found it consistently practicable to raise purebred or high-grade dairy calves in this way, opening great opportunities to start in good dairy stock on farms where otherwise such progress would be impossible. With beef calves the plan has not been a success; they seem not to adapt themselves so readily to artificial feeding at such an early age.

There have been virtually no losses among the dairy calves thus shipped in at two weeks of age and raised by hand, where ordinary feeding precautions were observed. Of course, it is essential that all vessels in which calves are fed be kept sweet and clean, and that the young calf be kept in a clean, shady enclosure.

Very small calves, if given the freedom of pasture or meadow, are likely to remain too long in the hot sun or to browse on all kinds of vegetation. This brings derangement of stomach and bowels. The calf that has a quiet stall in the barn, with regular feeds, is not likely to be sick. For this reason the winter months are just as favorable for raising baby calves by hand as any other season.

Shall I Sell My Skim Milk?

By Earl Rogers

SOME days ago I stopped overnight at a fine little farm near our capital city. There were five very good Jerseys on this farm which were producing 10 gallons of milk a day, all of which was sold.

The two lines on the farm that were being pushed the most were the cows and the chickens. The value of this milk, had it been fed to the chickens, cannot be well estimated, but the milk was very rich. I feel I am safe in saying that it would test very close to six per cent in butterfat.

Now, to estimate the value of the skim milk let's use a little arithmetic: Milk that tests six per cent in butterfat contains about 3.82 per cent of protein. The weight of 10 gallons of this milk would be approximately 85 pounds. The pounds of protein in a day's yield would equal about 3 1/4 pounds. Now get the prices of meat scrap, or whatever form of protein you use in your hen ration, and see what it would amount to. However, I don't really feel that one can compare skim milk to other forms of protein for hens that are laying, as the skim milk seems to have a place all its own.

When you come to compare the price of cream with the price of whole milk you will be surprised at the small amount of cash you realize on the skim milk. In most cases whole milk must make a certain test. It may test higher than the required amount. Farmers seldom have the time or the facilities to make an accurate test, and so, in order to be safe, they make their milk test considerably higher than standard. When the cream is sold, this margin is tested out and you are paid for it. There is no loss.

When we have low-testing cows the matter of selling off the skim milk is another matter. Of course the market will have a lot to do with this. There are places where whole milk is sold regardless of test, but

usually a test of three per cent at least is required, and in our towns I don't know of a lower test requirement than 3 1/2 per cent.

The farm that turns off a diversity of products seems to be the surest to succeed. I have often observed this. Occasionally the specialty farmer makes big money, but it is not generally true.

Chickens and pigs are two of the many sides of a farmer's business. So if the farm has cows on it, and they produce anything in particular, these other things go with it. It is a way of working up the by-products, because skim milk cannot be sold for what it is worth to the farm.

Every farm product that we can use is an added asset. Every time we make a trip to sell a product and then make another trip to buy some product to take its place, we are losing not only the time it takes to make the trade but we are also helping to support a middleman or two. Yet many of us are doing that very thing in more ways than one. I have been guilty, and suppose I will be again, but I won't be if I know it. It will be because I have been too lazy or slow to study my job. And farming is a job that requires good hard study and thinking.

Motor Trucking in China Has Big Future

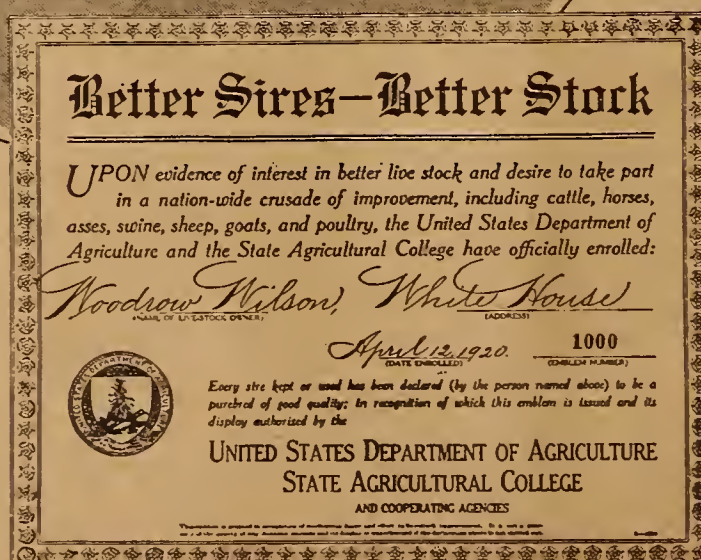
IF CHINA had fewer cemeteries it would have more railroads. Because every 10 feet has a dead man under it, China will probably have many motor trucks. Oriental reverence of ancestors, viewing the removal of graves as desecration, prevents the extension of present railroad lines. However, thousands of miles of post roads, if improved, will allow the use of trucks for freight and passenger transportation.

President Wilson's Sheep



Photos by courtesy of the U. S. Department of Agriculture

HERE are four of the 48 sheep in President Wilson's flock which he keeps in the White House yard. The certificate shows that they are purebreds and have been listed in the Better Sires—Better Stock campaign. In Europe the nobility and governmental officials are almost invariably interested in farming, so it seems very appropriate that our chief executive should be a leader in this campaign.



Honey Money Easily Made

MY EXPERIENCE in keeping bees on my farm covers a period of many years. They have always made me good money. I have learned to know them thoroughly, and to love them. I enjoy talking about the wonder of these interesting and useful creatures, the smallest producing animal of the farm. The history of their community life reads stranger than the most imaginative fiction.

My apiary is located in a grove of trees. The ground under the trees is in grass, and the surroundings neatly kept. The grove affords shade and provides convenient places for swarms to alight. By having the hives near the trees, and by paying close attention at swarming time, I very seldom lose a swarm.

The bee grounds are an interesting and busy scene on a bright summer's day. The real hum of bees can only be appreciated by personal experience. Not even a poet would like to take a morning nap in such a bee garden. My bees are all high-producing strains, consisting of Golden Banded Italians and Red Clover bees. The latter are able to extract nectar from the red clover blossom. I purchase high-bred queens from professional beekeepers, at from \$5 to \$10 each. The original stock of these queens came from Cuba.

In starting a new colony, I take a queen and put her in a brood hive with three or four frames containing comb, and with the proper number of worker bees. The queen lays eggs in the cells, the eggs hatch into grubs, and the worker bees feed the grubs. It requires about three days for the eggs to hatch, and six days for the grub or larva to grow. Then the cell is sealed over with wax, and at the end of twelve days out comes a full-grown bee. If the queen is taken from a hive or disappears from any cause, the worker bees raise another queen. They do this by enlarging cells intended for worker bees, and feeding the grub on a rich substance called "royal jelly." This extra care, through some mysterious and wonderful process of nature, not only makes the bee grow larger but also changes its sex to a female.

The worker bees, however, do not intentionally create a queen when they already have one. Queens are haughty, jealous creatures, something like human queens, and two or more are not satisfied to occupy the same throne at the same time. If perchance, however, a new queen should come into being and walk the honeyed palace halls where an old queen reigns, a royal combat begins as soon as they meet. One must die by the sting of the other. Nor do the workers seem to care which wins and which goes down to the shadows. They give room for the duel, and await the result, which usually is not long coming. The surviving queen is recognized as rightful sovereign, and the workers resume their round of duties.

AQUEEN lives four years, a drone lives one season or less, and a worker lives about two months. In the average colony there are about 10,000 worker bees, a number of drones (about a dozen), which are the male bees, and one queen. These make a unit colony, and the workings of this community is a wonderful story too long to tell here. Their life, with the probable exception of the ants, is on the highest plane of animal community existence, excelling man in more ways than one.

I keep bees for making honey, and learn the wonderful things about them by working with them. All of my hives have surplus caps on top, each containing 24 one-pound sections. In an average good year an average colony will fill these 24 sections four times during the season, making 96 pounds of honey in all. A good swarm in a good year will make as much as 400 to 500 pounds of honey. Honey is always in demand at a good price (I'm selling it for 50 cents a pound), and those who embark in beekeeping will never regret it, provided they give the bees the proper care and attention at all times. M. E. UNDERWOOD.

Overgrazing will ruin the best of pastures.



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Wadding In the Putty

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Your Part in Goodyear's Plan of Service

"I believe the use of Goodyear Tire Putty and Cement has helped me to get more than 4,000 miles extra from one of my tires. The Goodyear people persuaded me to buy and keep the Tire Putty Outfit in my car and showed me how to use it. I'm glad they did, because I sealed a bad 2½-inch glass-cut with this putty. Since then the tire has given 5,000 more miles and is still in service, although it surely wouldn't have lasted for another 1,000 miles except for the use of the putty."—C. A. Seelman, 5629 Drexel Avenue, Chicago

THERE are included in the Goodyear Service Plan three fundamental elements: the building of a fine tire, its convenient distribution, and an effort to help users exact every possible mile. The first element is accomplished in the Goodyear factories, where every phase of manufacture is so safeguarded that in use these tires will protect our good name.

The second element, that of convenient distribution, is effected through those thousands of Goodyear Service Station Dealers everywhere who deem your satisfaction the most valuable factor in their business.

The third element in the plan endeavors to increase tire mileage for

the user, and is most effective in those cases where the user lends it his full support.

So, Goodyear Dealers teach the causes of premature tire failure; they provide lessons on tire care; they will supply you with Goodyear Tire Savers and teach you how to use them.

Your part in this plan is to take advantage of their advice and carry tire savers in your car, so that when necessary you can repair tire injuries either on the road or in your own garage.

At the nearest Goodyear Service Station Dealer ask for advice and for the six Goodyear lessons on tire care; and stock your car with tire savers—these provide the means to greater tire mileage.

GOODYEAR
TIRE SAVERS

I Lost Money Feeding Hogs, But I Learned This Lesson From It

By Alfred Matthews

IF I should ask any man to pay me a few hundred dollars for the privilege of working for me a year, I think I would wait a long time and in vain to get any applicants for the position. Yet a good many farmers give themselves jobs of the same nature—I did it myself not so very many years ago.

I was located on a half-section of land in the thriving winter-wheat country near Great Falls, Montana. My homestead was quite a few miles away from the railroad, and it was a long, hard haul over roads that were not the best.

In a new country almost everyone succeeds getting in debt, and the more progressive they are the more debt they get into. I can't recall any farmer of my acquaintance who knew where he stood, who had his affairs in such a shape that he could put his fingers on them, and who wasn't trusting to blind luck, the banker's good nature and the weather to pull him through. At that time I didn't know how I stood myself. I just naturally wasted my energy, brought a big cloud on my credit, and put myself in a jack-pot. A proper appreciation of the necessary steps in the construction of a business was what I lacked and what had to be acquired.

Owing to the distance to town, I began to think it would be better to feed to hogs the grain I was raising. I had often heard the axiom, "Never haul anything off the farm—drive it off on four feet," and I thought that must include hogs.

In normal times grain prices are figured so much at Chicago, less freight, which, in my case, amounted to 18 cents a bushel, so that in 1913 our wheat did not net a very high price. Winter arrived early that year, and stayed pretty solid until spring, which precluded very extensive hauling, and I found about 600 bushels of wheat in the granaries. This strengthened my resolve to have plenty of hogs, so in January I bought 20 young sows that were due to farrow in April. I figured that I would sow the pasture to last until the following harvest, when there should be more cheap wheat available for fattening.

ON THE surface, to others and myself, it looked as though I held a pretty good hand, and that if I played the cards right I ought to win. But I found that profitable pork production proved to be an elusive proposition, because, mainly, I was not equipped to conduct the business properly in the matter of feeding, pasture, housing, labor-saving devices, adequate water supply, and numerous other factors which entered into the margin between what I could have sold the wheat for and what I obtained for the hogs. I found that it is a very particular business, and that it has to be carried on in a very particular way. Getting down to brass tacks, it is one thing to have the results of your work pay you wages and a dividend on the capital invested, and another thing to work and get neither wages nor dividends, but instead suffer a loss.

By the time the sows farrowed I had already fed about 200 bushels of wheat, which represented a market equivalent of \$125. I had no alfalfa or other pasture into which to turn the litters when they came; I had no roots or skim milk to supplement the grain rations, and the best I could do was to fence off some barren ground for exercise room. All the feed and water had to be carried to them in pails. The only feed available was wheat, which I soaked a day before feeding. Later I ground the wheat up and soaked it in an effort to make it go further. When weather conditions permitted, I sowed a couple of acres to winter rye for pasture, fenced and cross-fenced it, and waited patiently for it to grow sufficiently so that I could turn the whole herd of sows and pigs, after castrating the males, into the lots.

Meanwhile the 118 survivors of the 20 farrows were not getting the proper start in life—the sows were not able to produce good quality nor enough milk for them. I found out later that wheat is deficient in bone-making qualities. A hog virtually has to be built like a house—bone, muscle, and then fat, a step at a time, and when he

has reached normal growth the finishing touches are applied, the process I followed a little later on.

But the pigs in the batch I raised that year remained small and flabby, and it was not long before it became apparent that they were stunted and in otherwise poor shape. I kept a mixture of charcoal, salt, wood ashes, and slaked lime before them all the time, in an effort to build them up, but what they wanted was something

ened my decision, for when the price of wheat and other grains began to go up I began to realize very earnestly that my hogs were not going to bring in very much—no, not even a dollar profit, and I called in a live-stock man, who made a bid for the whole lot as they stood. There is one thing I will always congratulate myself upon—I had sense enough to let them go right then and there.

The following day, while going to town,

labor, pasture, hauling saved and hauling performed, final sale figures, interest on the money I had tied up in the wheat and hogs, etc. I wrote debit on one page of a book and credit directly opposite, and then I went to figuring. I was as fair as could be to both sides of the cost book, but could not arrive at any other conclusion than that I had lost \$600, after allowing a fair price for buildings and fencing left over.

The feeding proposition had done it. The wheat crop thus turned out to be a dead loss, and, furthermore, I threw good money away in the same direction by trying to put the right foundations under the business after I got it started.

All this I saw from the dark room of experience into which I had groped, and there was nothing for me to do but to combine intelligence with experience, and go at it again in an endeavor to retrieve my losses. I resolved to take plenty of time about it, because it became apparent to me that pork-raising was not a primary branch of farming—its success depends on feeds that have been raised to take care of its particular needs. And so I began my next attempt by studying the comparative costs of feeds, their nutritive value, and the most economical way in every respect to increase the margin between the value of these feeds and the sale price of the hogs.

FIRST of all, I laid the proper foundations for the business by sowing five acres to alfalfa, and I did not put a hog on the place until the alfalfa had acquired a good stand. Then I purchased a few good sows. I tore down the old houses, and built new ones under a centralized plan adjoining the alfalfa field, laying the buildings out in such a way so that additional houses could be added and more pasture procured. A runway was established between the buildings whereby feed could be conveyed without annoyance from the hogs, and underneath the runway pipes were laid to take care of the water supply, these leading directly into drinking tanks and also cement-lined "baths" or pockets in the ground in which the hogs could wallow during warm weather.

I had things fixed so that feed could be put in troughs evenly, without the hogs bothering, and then when a lever was pulled a swinging door arrangement allowed the feed to become available all at once, every hog getting an equal share. And as all other farming activities developed, I embodied every convenience that meant a saving of time and labor, and was very sure this time that the business was not getting ahead of me.

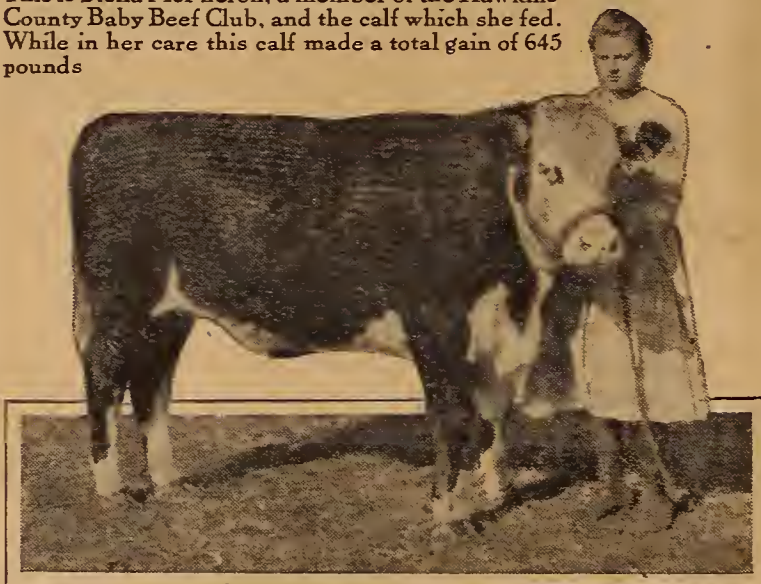
One of the most interesting and profitable parts of the business was the half-hour each week spent keeping accounts. I put a value on the use of the pasture worked from the cost of feeds as a basis, including the money tied up in the business, approximate time spent each day, and every other item that could reasonably be charged against it. When the porkers reached a weight of between 200 and 225 pounds, I sold them, and placed the sale figures on the credit side of the book. After allowing a valuation for brood sows retained, I found that I was a winner by about \$300. Skim milk, oats, barley, and wheat ground, mixed, and soaked in barrels mounted on wheels; alfalfa pastures, ground-up roots, plenty of water, and slaked coal—which I found to be as good a regulator as anything I ever tried—did the trick, together, of course, with the added facilities for economical handling.

Costs! Yes, I learned that keeping accounts is as valuable as ground on a farm, that mistakes in management are thereby shown to exist, and become so obvious that a farmer will not make them twice. All that I found necessary was a double-page book upon which everything that costs money and labor was entered on one side, to be compared later with everything produced—the final sale figures and the improved valuation of the farm.

Poor lubrication, overloads, and dust tie for the first place as the tractor's worst enemy.

How Twenty Boys and Girls Became Prize Feeders

This is Stella McPheron, a member of the Hawkins County Baby Beef Club, and the calf which she fed. While in her care this calf made a total gain of 645 pounds



EVERYONE if familiar with the exceptional boy or girl who grows an enormous crop of corn, or who feeds an especially fine pig. Everybody is not at all familiar with a club making exceptionally good in the feeding of baby beefs. The Hawkins County Baby Beef Club, in Tennessee, composed of twenty boys and girls, entered a carload of sixteen baby beefs in the Nashville Fat Stock Show last winter in competition with experienced breeders, and secured the second prize of \$500.

"It was in the spring of 1919 that I started the work of getting the club together," says County Agent M. V. Koger, who is responsible for the club's start. "Before we knew it we had an organization of twenty boys and girls anxious to learn the fine art of feeding. Our first big problem, the financial end, was solved by the local banks, who offered to lend us enough money to buy the stock necessary to begin work. The loans were made direct to each member, who was personally responsible for payment. They were made with the consent of the parents, of course. Two thirds of our twenty members were started in this way, while the others were backed by public spirited men, some of whom even went so far as to furnish the cost of the feed."

"When enough money had been raised, each member bought a high-grade Hereford calf, which they fed for the six months that followed. A number of the youngsters had had little or no experience in feeding cattle. Some of them made mistakes, but it wasn't long before my 'kid' club had grown into an organization of real feeders. At the end of the period each of the baby beefs had made an average gain of 409 pounds, at a cost of 13½ cents a pound."

The story doesn't end with the group success. One of their members, Henry Walters of Rogersville, turned out to be an individual champion. His heifer took first prize as the best Hereford baby beef in the Fat Cattle Show, and first place as the best individual heifer. Prizes with these honors were \$100 each, which, plus his share in the \$500 won by the club as a whole, made his winnings \$331. His heifer sold for \$32.50 a hundred pounds, making his total receipts \$531.

Quite a record for a group of inexperienced youngsters on their first year out!

JAMES SPEED.

succulent and green that had the bone-making and appetizing properties in it; for the hog is a natural foraging animal, and during its growing period, if allowed plenty of exercise and pasture with a little skim milk, will do very well on a small amount of grain.

By the time the rye was big enough for pasture I had very little wheat left, and had to buy 80 bushels more from a neighbor to eke out until the coming harvest. But the damage to the growing pigs had been done, and I began to see that it was impossible to relieve their stunted growth. Therefore I resolved to get from under the load I was carrying at once, by disposing of the whole herd. Just about that time the European war broke out, which hast-

I met a neighbor who was getting along very well, a man who was given to much thought and reflection, and as usual we hollered "Whoa!" and stopped for a few minutes' chat.

"How did you make out on your hogs?" he asked on learning that I had disposed of them.

"Don't know as I could tell you," I replied. "Haven't figured things up yet," and as I remember it a peculiar look came into his eyes when he heard those words. Indeed, to me it was as good as saying, "Better get busy." It was lucky my memory served me in regards to the main costs of my ill-starred pork-raising venture—how much wheat I had to begin with, the purchase price of the sows, feed bought, fencing, lumber, approximate amount of



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greater your wonder grows
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service are still left.

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"Best in the Long Run"

The Goodrich Adjustment Basis: Silvertown Cords, 8000 Miles; Fabric Tires, 6000 Miles

The Truth About Lime

(CONTINUED FROM PAGE 6)

If the application is not made sufficiently heavy to supply the wants of the soil soundly for a crop rotation the lime should be applied when the ground is being prepared for the small grain crop with which the grass and clover will be seeded, or when a seed bed is being made for grass and clover alone. The lime or limestone should always go on the ground *after* the plowing has been done, because the tendency of lime is to move downward.

Farm-burned lime may be put in with the manure spreader or a lime distributor that is provided with a sieve to remove refuse material. The hydrate and the limestone are easily applied through a lime distributor, and the best results are obtained when the ground is thoroughly disked after the distribution. We want a particle of lime in every cubic inch of soil.

A high-grade lime marl is a carbonate close in value to air-slaked lime, and air-slaked lime, we must remember, has practically the same value only as very finely pulverized limestone. Wood ashes formerly were an excellent source of lime, but have ceased to have any large commercial place. The ashes upon the market are apt to contain much dirt and moisture, and the lime often is largely in a carbonate form. Possibly ashes in average condition upon the market have a lime content whose value is not over one third that of pulverized limestone or air-slaked lime.

The exceptions to absolute safety concern only (1) the man who might apply several tons of caustic lime per acre, adding no manure nor sods to supply humus, and (2) the owner of light sandy land, who should prefer a calcium to a magnesian lime if applied in a caustic state. These exceptions, as I have said, have importance to relatively few people.

If you are having soil trouble, it might pay you to look into the lime requirements of your farm.

Why the Frog Croaks

(CONTINUED FROM PAGE 14)

"Mr. Toad is disgraced, and Mr. Frog is as badly off!" folks muttered, looking with awe upon the angry fairy of the Milky Way.

The lady announced that she would leave the woods and never return until the toad could speak and the frog learned better manners.

"I too shall never speak until you return and tell me that I am forgiven!" Mr. Frog declared, hopping away to the marsh and jumping into the water.

The frog did not mean that he would never make a noise again, but he meant that he would never again say real words.

As the fairy of the Milky Way left the woods on a moonbeam, the nightingale flying ahead to the sky, Mr. Frog croaked at his ill luck; and when the story became known to other frogs, they too croaked and croaked until the woods echoed their plaints.

So, every night in summer, the frogs of the marsh, stream, and lake croak and croak when the dew falls—for it was the dew which made most of their troubles.

To this day toadstools pop up suddenly here and there, near stumps and other damp places, and so far as the inhabitants of the woods and fields know they are made to grow by toads who hope that the fairy of the Milky Way will come again, sit upon one of these safely, and thus make it possible for their kind to talk as they used to long ago, according to this tale.

The fairy has never come back, so toads do not talk. Cutworms busy themselves everywhere in summer, snipping the stalks of plants to make sure that no frog may succeed in getting the good graces of the fairy, in case she might take a notion to return.

"Croak, croak, croak!" say all frogs to show their discontent at the failure of the frog of long ago, who lost his chance of being the favorite of the beautiful fairy.

Katydid saw on their fiddles, as do the hoppers and crickets, and bullfrogs boom in the marshes; but until the fairy does come again there will be no minstrel band to play in the woods.

And all this was brought about because Mr. Frog did not keep his word with the little cutworm.

The only way to know the exact value of a cow is to know how many pounds of milk and butter she produces in a year. Keeping a record is not as much work as you think.

Fairbanks-Morse

"Z" Farm Engines

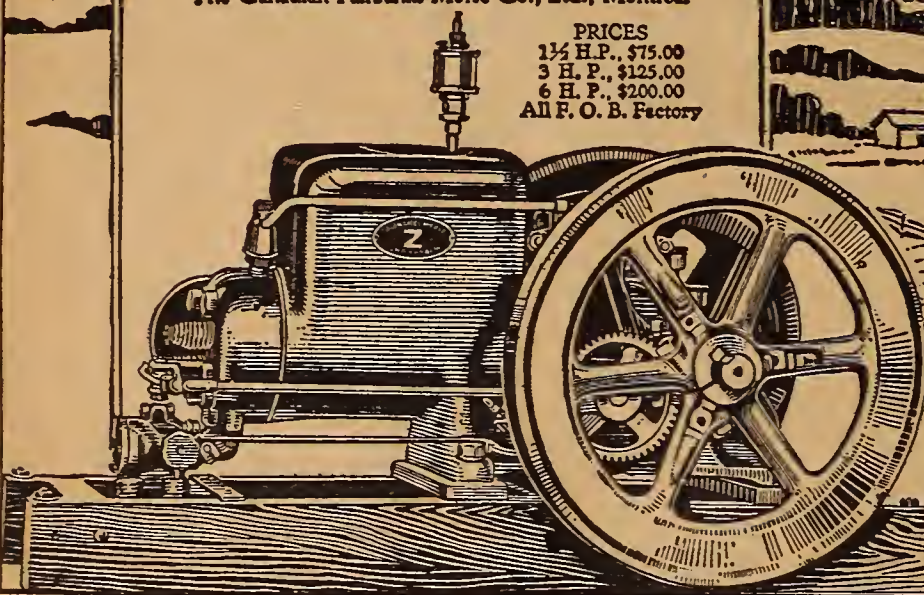
THE supremacy of the Fairbanks-Morse "Z" Farm Engine was predestined. It had to be. For not another engine offered so much in workmanship—in factory-created quality—and in farm-tested performance.

Over a quarter-million shrewd judges of engine values made this engine famous over-night! They found in the "Z" that dependability that they had hoped for since the day of the first farm engine. They justified the faith of the men who made this engine by endorsing their product to the extent of buying over fifteen million dollars worth from "Z" Engine dealers.

In the "Z" they bought dependable power—more than enough for every farm need for which the type you choose is adapted—dependable workmanship which has made the utmost of high grade materials—a correct design—Bosch Magneto—all unified by the efficient service rendered by thousands of "Z" Engine dealers.

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PRICES
1½ H.P., \$75.00
3 H.P., \$125.00
6 H.P., \$200.00
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Several Hundred Ohio Farms For Sale

WE are offering several hundred of the best farms in Ohio at prices that are low in comparison to the value of the property and the income assured purchasers.

These farms are a part of the Miami Conservancy District, which is a political subdivision of the State of Ohio, and represent a surplus acreage that we own in the Miami Valley.

Rich silt loam top-soil deposits make this land very productive—practically inexhaustible.

It is our earnest desire to bring more good farmers to this community, which lies within a thirty mile radius of Dayton. Quick markets are available by rail, interurban and highway.

We Would Like to Send You Booklets Giving Detailed Information. Just Address "Farm Division"

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Powerful 2½ H.P. Engine runs pumps, cream separators, washing machines singly or together. All small machines—22 in. circular saws. Satisfaction guaranteed, 80 days' trial. Sold on the Galloway plan direct from factory to farm.

Order direct from this ad. Write Today and get prompt delivery. Shipped from close by points. Money refunded if not satisfied.

The Wm. C. Galloway Co.
Box 385, Waterloo, Ia.

I Paid \$3,500 for This Horse

[CONTINUED FROM PAGE 7]

Son. My father did not live to see me attain any success. That has always been the great regret of my life. But he had faith in me, and when a Father believes in his son, and shows his son that belief, the boy is fairly started. Hard work will do the rest.

I was discouraged, but not defeated. I cleared out the whole bunch of purebred Belgians and rested from my labors.

Not for long, however. In 1908 I had four head—three mares and a stallion—selected for me in Belgium. One of the mares died thirty days after reaching Irvinedale Farm—the home place at Ankeny, Iowa. That was a hard blow, but I was used to blows by then. I took a few head down to the Iowa State Fair that year, the first time I ever showed at any fair, and took back two blue ribbons and one white. I felt as though I was started at last.

The next year (1909) I went to Huntington, Indiana, to a sale held by George W. Souers & Son, and bought four mares, including one named Duivelinne. Then, right here at home, on a near-by farm, I purchased a yearling colt just imported from Belgium, named Danube, who is deserving of the credit for putting me on my feet. Mated to Duivelinne, Danube produced Irvinedale Rowdy, for which John Brunton paid me \$25,000. Mated to Finch's Blossom, Danube produced Irvinedale Jean, first-prize winner in the three-year-old stallion class at the 1916 International.

And so the long list of Irvinedale Farm winners was begun.

IN 1913 I made my first direct importation. Within six weeks twenty-three head of horses reached Irvinedale Farm. The lot included Frison (first-prize aged stallion at the 1919 International, a grandson of Bristol, sire of Danube) and three of the five money winners at the Iowa State Fair that year.

Then came Alfred de Bree Eyck!

I am sometimes asked to tell the secret of success with good horses. I can hardly say. But no one can succeed who does not love his work and the things with which he works.

I have loved horses all my life; it was born in me. Then, my father put confidence in me; what a wonderful factor that was! Supposing he had laughed at my dreams, refused me financial aid—I cannot imagine what the result might have been. But he did none of this. He came to have the same dreams I had, to see the same visions I saw.

A little help, a little encouragement, from a father means a world of success or failure to a boy. Don't withhold it!

That's all there is to success, when all is said and done. To see a vision, to have faith; to work toward that vision, and to keep that faith. Alfred chose the right sire. So did I. My father had faith in me, I had faith in a horse. Together we have realized my dreams.

What Your Farm Wood Lot is Worth

[CONTINUED FROM PAGE 13]

for rough use. He remembers that healthy, standing timber does not deteriorate rapidly, and that under present conditions it is constantly increasing in value.

The wood-lot owner, hence, is never obliged to place his material on the market regardless of supply, demand, and current prices. If you sell on the stump, or in the form of crossties, poles, piling, or other products, be sure that you are dealing with a reliable, reputable buyer who will pay well and promptly for good material. In instances where the cutting is done by the purchaser, make him sign a timber sale agreement which should stipulate just what material may be cut, when the work is to be completed, what condition the woods must be left in, and similar vital facts which, unless they are settled to everyone's satisfaction to begin with, may cause potential trouble.

The amount of capital invested in farming is large and constantly increasing. In 1910 the value of all farm property was approximately \$41,000,000,000, or more than the capital of all the manufacturing establishments, railways, mines, and quarries in the United States. The value of farm property in 1919 is conservatively estimated at more than \$51,000,000,000.

A Message to the Ambitious Boy

SOMETHING is prompting many an ambitious farm boy to go out into the world to seek his fortune. It is only natural that far-off pastures seem greener—that the city seems the place of opportunity. Thousands of farm-reared city dwellers once thought the same, only to find when it was too late that opportunity had been left behind on the old home farm.

If you are tempted to desert the farm, you are facing a crisis in your life that deserves much earnest thought and study. Don't decide until you have talked with men who can best guide you. Talk it over at home. Perhaps your father at this very moment is planning to take you into partnership, to give you an interest in a plot of ground or in some livestock that will be the foundation of a fortune of your own.

Agriculture is the greatest human enterprise—the oldest, most honorable business in which mankind has ever engaged. All men, women and children are dependent on the man who farms—they must have his products whether he specializes in grain, vegetables or livestock. The chances for business success are ten to one in favor of agriculture.

For every ambitious country boy there are a dozen city toilers, sick and tired of the endless grind, struggling desperately to keep abreast of the ever-mounting cost of living, longing for a chance to take their families to God's great out-of-doors. Millions of men of the city are envying you this minute because you are young and on the farm. They know that the four-leaf clover of your good fortune is growing by your home doorstep.

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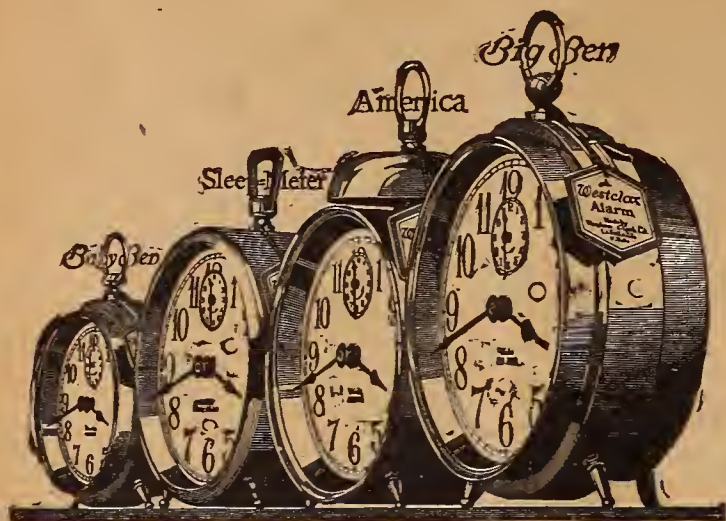
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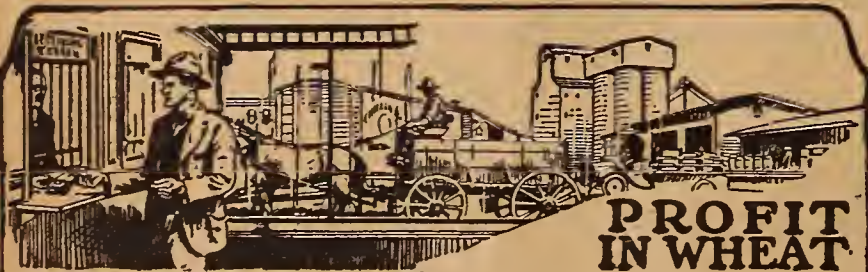
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PROFIT IN WHEAT

There will doubtless be less wheat sown in the fall of 1920 than was sown in 1919. Yet there are very many farms on which the crop will be sown with the double purpose of producing wheat and providing a convenient means of seeding clover and grass, even if but small profit is derived from the wheat itself.

But it is quite possible to make a good profit, get a larger yield of better wheat, and set a better stand of clover, if one uses the right fertilizer.

For the past five years the wheat fertilizers have been makeshifts without

REAL POTASH

Now it is possible to return to the regular kind and it will pay to replace the Potash removed by five years cropping. If you will insist on wheat fertilizers that contain 4 to 6 per cent REAL POTASH, you will find that

Potash Pays

on wheat, clover and grass. If your dealer will not sell POTASH SALTS or the kind of fertilizer you want, write to us and we will refer you to those who will.

SOIL AND CROP SERVICE, POTASH SYNDICATE, H. A. HUSTON, Manager
42 Broadway New York

Ruth and Romance

[CONTINUED FROM PAGE 18]

after the party, "See you sometime before taps."

He proposed the earlier trip to Artists' Joy before taking the glacier trail.

"We ought to visit one place that's new to you. Besides," he nodded toward the groups trudging the upward paths, "the glacier will be mobbed for the next two hours." It gave her a thrill that he wanted to see it in her company alone.

They strolled along leisurely at first, the man swinging his Malacca stick with a quite perfect air of careless custom. Ruth would have given her seed-pearl necklace to have bestowed this air upon Hiram. Hiram never used a walking stick. She felt a heady exhilaration in the knowledge that they two looked well together. Everyone who passed paid the tribute of a stare. She knew she looked nice, and it was wonderful to see anyone have such a good time as Hastings. His smile showed his strong, white teeth, his pugnacious nose wrinkled with enjoyment, and deep breaths of satisfaction tugged at the buttons of his well-tailored coat. His pleasure was infectious. She found herself walking more quickly to keep up with him. But she was soon panting, and he slackened his pace, in bantering apology. He apologized again when after an hour they reached Artists' Joy and stood with their backs to the cliff which from every angle commands a superb view of the mountain, valley, and white, glacial river.

"Forgive me if I seem to neglect the view. We have views over the border, but no girls worth looking at." Ruth only smiled, and said it was nice to be a rarity.

From Artists' Joy they took a short but difficult trail to the glacier. Hastings did not notice, as Hiram would have done, that the berry vines snatched annoyingly at her skirts; and, while he made pretty remarks about the difficulty of supporting anything more than a fairy on those feet of hers, he didn't seem to have any clear idea of the mountain-climbing capacity of a city girl who was not fond of sports. Because her cheeks were still pink—with exertion and shocked delight at his lively tales of forest adventure—it evidently didn't occur to him, springing along with unspent energy, that her step was far from elastic on the last stretch to the mouth of the great glacier.

THE solitude in which Hastings had wished to view the natural spectacle was complete. Even the old man who had offered stupid facts about the place yesterday no longer waited for tips at the entrance. A quarter of a mile down the most traveled road the last stragglers wended back to the hotel. The sun was well above the horizon, but the shadow of another peak kept its rays from the glacier, and the air was cool. Beside the thin, headlong streams rushing together from the glacier mouth, they leaned against a sugar-loaf rock and rested.

"It's about five o'clock by the shadows. Time to put on that extra sweater you didn't bring."

"It would have been a bother to carry," Ruth agreed with the teasing implication of his tone; but it seemed odd that he shouldn't have thought that she might very comfortably have worn a wrap at that moment.

Hastings looked patronizingly at the dust patches which on the lower reaches of the ice river replaced the dazzling whiteness of the upper snows.

"It's a dirty brute," he said.

"It looks dirty because we aren't near enough," she defended it. "From the mouth you look up into the loveliest cave—like the Blue Grotto, all crystal and shining. In one place one could stand up straight."

"Why then do we waste time here?" demanded Hastings. "Come along!" He held out a strong, brown hand to help her down. She hated to move, but it was foolish to lose the whole point of the expedition. She gave him her

hand, and they picked their way among the little streams running low among the rocks until they reached the mouth of the great glacier.

Even Hastings was impressed. Seen from beneath, above the water trickling over the solid rock scored ages ago by the pressure of the glacier, or running along pebbles in places where the earth had been long since washed away, the unevenly vaulted roof was clear and blue, and at one point, which entered for a considerable distance, it was, as Ruth had said, high enough for one to walk upright.

"This is wonderful, do you know it?" the man asked, and, stooping and avoiding the blocks of fallen ice which lay about the entrance, in an instant he was inside and picking his way among the rivulets and stones to the place where the direction of the vault changed. Looking beyond the ice angle he exclaimed, and, turning back, beckoned Ruth to come in.

"This is the place that takes the medals!" he called.

"But do you think it safe?" Ruth inquired timidly. She had wanted to go in when Hiram pointed out the dangers; now she hesitated.

"Never heard of anyone getting bitten by a glacier, did you?"

"No, but—" Ruth looked at her soiled shoes and dusty skirt, with threads pulled here and there by the briars. She couldn't be very much worse—

HASTINGS turned and came back to the entrance.

"Really, Miss Goodnow, I shouldn't feel right to take you back without seeing this," he said. "And embedded in the ceiling—part of the mural decoration—is a perfect dragonfly, with the whole glacier for a setting. The 'fly in amber set' was a piker to him. Come on, it's only a few easy steps." He balanced on a rounded rock and held out his hand.

"All right." With a little gasp Ruth stooped at the only point high enough to admit her, and entered the cavern.

"Oh, but it's cold!" she shivered, and the tones of her light voice echoed.

Hastings laughed and steadied her toward the turn of the vault. The sound rumbled uproariously.

"Great echo, what? But of course it's cool—cool as custard. Why shouldn't it be, with ice all around and ice water below? But we won't be here a minute. I just want you to see this fly. Careful—take that smaller stone. That ice cake is flat enough—O. K., and the two stood at the turn of the passage which was completely filled by their bodies.

The vault beyond was like a little chapel.

"Everybody here but the minister, eh?" queried Hastings jocosely with a little pressure of her hand; and he hummed "Here Comes the Bride." It was really romantic.

But behind them a scrap of ice fell from the glacier's mouth and rattled audibly on the stones above the rush of the water. Ruth jumped nervously.

"I don't think we ought to sing or shout in here. Avalanches are sometimes started by a mere whisper, you know. Those big cakes back there probably fell by their own weight." She wiped from her face the drops which had fallen from the roof of the grotto.

"But they are at the entrance. They couldn't possibly do us any harm unless we happened to be going out."

"Perhaps not."

She looked doubtfully at the ice cakes grouped at the cave entrance. All the same it seemed—well, almost irreverent to shout in a cave. It was like singing in a thunderstorm when the lightning might strike any minute. But the dragonfly was astonishing. He was perfectly preserved, and suspended as in air in the translucent ceiling.

"Poor thing!" said the girl, looking up and touching with her finger the ice to test how deeply the insect was imbedded. "I suppose he lighted on the glacier



years and years ago on some hot afternoon like this, and got numbed and made a dust hole and sank in."

A spatter of ice water struck her nose. "Ugh!" she shivered. For the first time she looked directly at Hastings. In the blue light his bronzed face had a weird, unearthly appearance. She must be a fright. The knowledge increased her conviction that they had been there long enough. "Let's go now."

They picked their way toward the entrance. In the middle of the vault the man threw up his chin and gave a parting halloo. The cave seemed full to bursting with the sound. And, somehow, when it should have ceased it continued in an ominous splitting noise. Before their eyes a huge slab of ice detached itself from the glacier and fell in the only path of exit from the cave. The room darkened somewhat.

Even the man turned serious. "Stay here!" he ordered, and for the first time Ruth heard from him the tone of the dominant male. He strode forward regardless now of the shallow water and examined carefully the space bounded by the bed of the glacier and its edge. It was the largest remaining exit, but it would not possibly permit a human body to pass. He began to creep about the cavern, peering between the margin of the ice and the rock below, and sounding the spaces with his walking stick. Ruth waited in petrified silence until he had made the circuit. Then "How are we going to get out?" she asked.

"WELL," he said shortly, "we aren't going to get out—at once. My plan would be to wait until our friends return to the hotel. They knew we were coming here, and when we don't turn up for dinner they will hunt us up."

"But dinner isn't until seven, and they'll spend at least an hour at it, because there's nothing to do but eat and play cards after dark, and after that it will take an hour to get here, and then they'll have to go back for pickaxes and things to pick us out."

"That's so," the man acknowledged. "Well, we'll have to do the best we can to keep dry and warm until we see whether we're going to be rescued," and he added: "As long as there is any light the ice will let a good deal of it through." He stooped and began to collect loose stones from the floor of the cave and put them in a spot near an opening where droppings from the glacier were least frequent.

"And when there isn't any more light?" she faltered.

"We'll sit in the dark."

"What time is it now?"

"I haven't my watch." He laughed grimly, without pausing in his work. "I didn't want to remember time in my one holiday, so I took it off. But you're wearing one, aren't you?"

"Mine doesn't run." With the primitive emergency the politeness of civilization at once wore thin. She met the glance which wondered what good a dead watch was with one which thought it very childish in a man to ignore the time of day. Hiram would never have done it. The romance of a timeless day did not strike her at that moment. But either her alarm emphasized the gloom or night was falling rapidly.

"I'll help," she said, and stooped to tug at a sharp stone. It hurt her hands cruelly. Her pink and white sash dragged in the dirt, her smart sport skirt dipped into the water. The stone did not budge.

"You'd better not hinder, young woman," he said. "Sit down!" He pointed to the more or less flat heap of stones he had piled. "Put your feet on that raised rock in front, and try to remember its relative position to the seat. And while it's light look around and take a mental picture of the cave. I'll possibly be able to get enough loose stones for another seat beside you. It will be as close as I can sit, too. You understand there can't be any nonsense about this. We've got so much warmth between us and we can't afford to waste a bit. If we can't keep warm sitting side by side, I'll have to hold you."

IF HE had been giving John the janitor directions for fuel-saving the proposition could not have sounded less sentimental. Ruth nodded. Still she resolved to endure as long as possible in the side-by-side arrangement. And she wished he'd hurry. The occasional gusts of outside air, which when one was in the open, seemed so keen at this hour, were balmy in contrast to the deadly cold within. But the hole was small, and the frigid breath of the cavern was all about her. And her shoes were wet with glacier water, and her hat and sweater from the droppings of the icy walls.

In the waning light Hastings looked

[CONTINUED ON PAGE 32]

MOLINE

The Universal Tractor

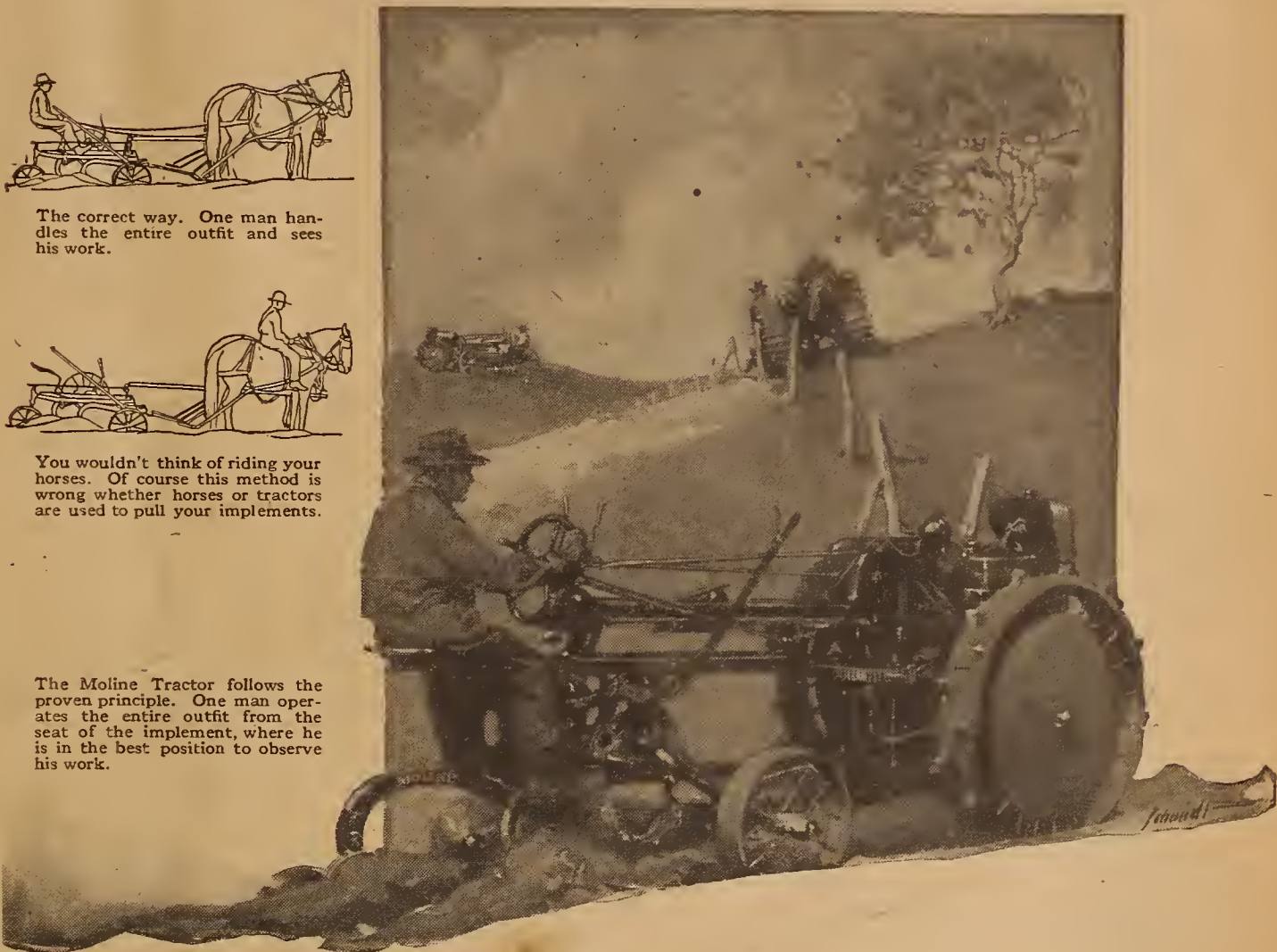


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Yours truly, W. T. MACK, Marion, O.

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Durable-DURHAM is hosiery for all the family—all sizes, styles and weights—for men, women and children. Dress hosiery and work hosiery for every season of the year.

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Positively will not injure the most delicate fabrics. Non-poisonous. Will soften hard water. Send 10c for two weeks, or \$1.00 for 25 weeks' washings.

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GET THIS SUIT

made to your own measure. It won't cost you one single cent. We will give it to you so you can show it to your friends. It will be a big advertisement for us. You can easily make from \$35 to \$50 EXTRA Every Week and besides that be the best dressed man in your town. It's an opportunity you cannot afford to overlook. Even if you only want to order a suit for yourself, don't fail to

Write For Our Big Offer
Don't delay a minute. Drop us a line or send us your name on a post-card, and we will send you absolutely free, our wonderful style book, containing 64 beautiful samples to choose from. Write now.
The Progress Tailoring Co., Dept. 501 Chicago



SALE OF U. S. Army and Navy Goods

For Camp and Summer Outfits

Ask for big catalog 108 today

Army Khaki Shirts	\$2.00
Navy Underwear	.75
Army Ponchos	1.25
Army Wool Breeches	2.50
Khaki Trousers	2.50
Army Pup Tents	3.50
Army Mess Plates	.25
Army Blankets	5.00
Army Raincoats	3.50

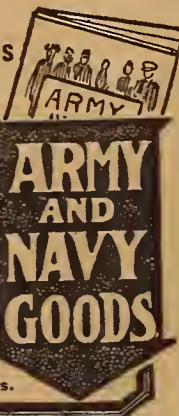
and all other articles for camp or outdoor use

SEND 10c FOR ARMY & NAVY CATALOG-108-AND BUY AT AUCTION BARGAIN PRICES

ARMY & NAVY STORE CO.

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Largest Camp and Military Outfitters.



*President
Suspenders*
for comfort

Every pair guaranteed

MADE AT SHIRLEY MASSACHUSETTS

If You're Hot and Hungry, Try These

By Nell B. Nichols

Recipes worked out in Farm and Fireside's experimental kitchen

ICED COCOA

3 teaspoons cocoa paste	1 tablespoon crushed ice
2 teaspoons sugar	1 tablespoon whipped cream
Milk to fill glass	

Mix the cocoa paste and sugar and pour into glass. Then add milk and ice. Top with whipped cream. The well-beaten white of an egg, slightly sweetened, may be used in the place of the cream if desired.

ELSIE'S SALAD

4 cups shredded cabbage	1 cup sliced pineapple
2 cups marshmallows	1 cup nuts

Arrange the pineapple, which is cut in small cubes, the finely cut marshmallows, and the chopped nuts on the cabbage, and serve with Pineapple Dressing.

PINEAPPLE DRESSING

3/4 cup sugar	1 tablespoon flour
2 tablespoons butter	1 cup pineapple juice
2 eggs	1/2 cup whipped cream

Mix the flour and butter together, and add the egg yolks, beaten, and the sugar. Then add the stiffly beaten egg whites. Over this pour the pineapple juice, which has been heated until it is warm. Put the mixture in a double boiler, and cook until thick, stirring occasionally. When cold, and just before serving, add the whipped cream.

FROZEN RICE

1/2 cup rice	4 tablespoons powdered sugar
1 1/2 cups sweet cream	1 teaspoon vanilla

Boil the rice until tender; add the cream whipped to a froth, the sugar and flavoring. Pack in an ice-cream freezer, and let stand for three hours. In packing the freezer use three cups of ice to every cup of salt.

APPLE PIE WITH MARSHMALLOWS

Line a deep pie pan with plain pastry, and cover the bottom with well-flavored apples cut in eighths. Sprinkle with brown sugar, [CONTINUED ON PAGE 29]

Better Farm Babies

THE enclosed registration card will announce the arrival of our Better Baby. We think of her as a Better Baby because of the wonderful help your letters have been for the past nine months.

My wife and I looked forward to each one with interest, and I don't believe we shall ever be able to express our appreciation. Our only wish is that your work will become so universal that all prospective mothers will benefit by it. Mother and baby are both receiving good care, and are progressing nicely. You will find enclosed 50 cents in stamps for the next series of letters covering the care of the baby. We certainly do not wish to be without these.

Thank you again for your helpful letters.

Mr. & Mrs. A. Z. A., Ill.

A Colorado Better Baby smile



to us after being married nearly six years and no children.

I have tried all the time to make a Better Baby of her, and think she must be one, as she has never been sick. She has two teeth, and creeps around most anywhere now, and tries to pull herself up by holding to a chair. We take her out every day—she enjoys it so. She has always been used to plenty of fresh air.

I received your letter for the eighth month, and I have been giving her some milk and toasted bread and a little fruit juice. We take FARM AND FIRESIDE, and I always enjoy reading the letters about the Better Babies.

I always tell my friends of your Bureau, and I'm proud for them to know I belong to such a wonderfully helpful and interested organization as your Mothers' Club.

Many thanks again for all your good letters.

Mrs. E. H., Florida.

What the Better Babies Bureau Is And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with *Fifty Cents* in stamps, for postage, and state what month you expect your baby.

THE MOTHERS' CLUB: Every mother of young children is eligible. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends *Fifty Cents* in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for *Ten Cents*. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

BETTER BABIES BUREAU

or to Mrs. Caroline French Benton, Counselor

FARM AND FIRESIDE

381 Fourth Avenue, New York City

A Lemon-Aid Lawn Party

By Emily Rose Burt

A NEW kind of lawn party they wanted—partly for fun and partly for funds. Imagine then the anticipation aroused in town when pale yellow posters lettered in black appeared in various local windows:

Lemon-aid!

For and by the Ladies' AID Society
of the First Baptist Church
Kingsboro

Thursday evening, August fifth
More here than meets the eye
Come and taste before you buy!

The church lawn was festooned with pale yellow Japanese lanterns looking like huge swaying lemons. Pretty waitresses in white, with frilly organdie aprons of lemon-color, flitted about among little round tables. There was also a long counter, à la soda fountain, lined with tall glasses and

was promised. Here a large tub of genuine pink lemonade delighted the youngsters, incidentally keeping them out of the way of the older people. It was ladled out by the tincupful by a jolly "barker," and of course there were peanuts to sell, hard by.

Another sign directed to the *Lemon Tree*. "Don't expect peaches where only lemons grow" was the warning. Two girls dressed as farmerettes, wearing remarkably becoming wide-brimmed hats, stood beside a syringa shrub which had somehow or other grown a crop of lemons. Crêpe paper they proved to be when exchanged for a dime each, and under the cotton wool stuffing was some small toy or "grab."

A girl in a yellow sweater went about with a ribbon-slung wicker tray, filled with tiny tin boxes painted lemon-yellow, containing candied orange, lemon, and grapefruit peel.

A very popular attraction proved to be lemon sticks stuck in oranges ready to suck.

There were several games and stunts, one which kept the younger contingent lively was called "The Lemon Squeezer." Yellow cheesecloth curtains, hung in a circular arrangement, admitted one appli-



The clown with his great bouquet of bobbing yellow balloons was simply not to be resisted

manned by two lively white-coated boys. Behind it were hung large placards stating the list of beverages to be had!

AIDS TO JOY

Plain Lemonade.....10 cents
Lime Lemonade.....10 cents
Strawberry Lemonade.....15 cents
Grape Juice Lemonade.....15 cents
Charged Lemonade (Strictly cash) 10 cents

You could either stroll up to the counter and sip your "aids" through a straw or else sit down at a little table to be served by a butterfly waitress, who offered you your choice of crisp little lemon cookies or a wedge of luscious lemon meringue pie to accompany your lemonade.

Presently a boy in a yellow clown-suit appeared on the scene with a great bouquet of bobbing yellow balloons, which even the grown-ups couldn't resist, to say nothing of the children.

A sign post pointed its finger toward a corner of the lawn where *Circus Lemonade*

cant at a time. After entry, shrieks of laughter were heard from within, and the owner of the laughter presently emerged in great glee.

The secret was that two cunning tots of five were waiting within to dispense fervent hugs.

Someone during the evening enthusiastically rendered the old ditty, "I picked a lemon in the garden of love, where they say only peaches grow."

There was great sport over that pleasant old game called "Oranges and Lemons," in which the lively younger members were eager to join on the smooth lawn in the gay yellow lantern light.

Fortunately it was a hot evening, so that the aids to keeping cool were well patronized, and as a result the Ladies' Aid Society scored both socially and financially.

NOTE: A full description of the game "Oranges and Lemons" will gladly be sent on request of a stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

If You're Hot and Hungry, Try These

[CONTINUED FROM PAGE 28]

bits of butter, and add four tablespoons of cold water. Bake until the apples are tender. Then cover the apples with marshmallows, cut in fourths, and return to the oven and brown the marshmallows.

PEACH-PIE DELIGHT

7 peaches
1 cup sugar
4 tablespoons butter
1/3 cup flour
1/4 cup water
Speck cinnamon

Line a deep pie pan with plain pastry. Sprinkle the bottom with one half of the mixture made by rubbing the sugar, butter, and flour together. Lay on this the peaches, which are halved. Lay the cut side down. Over the peaches sprinkle the

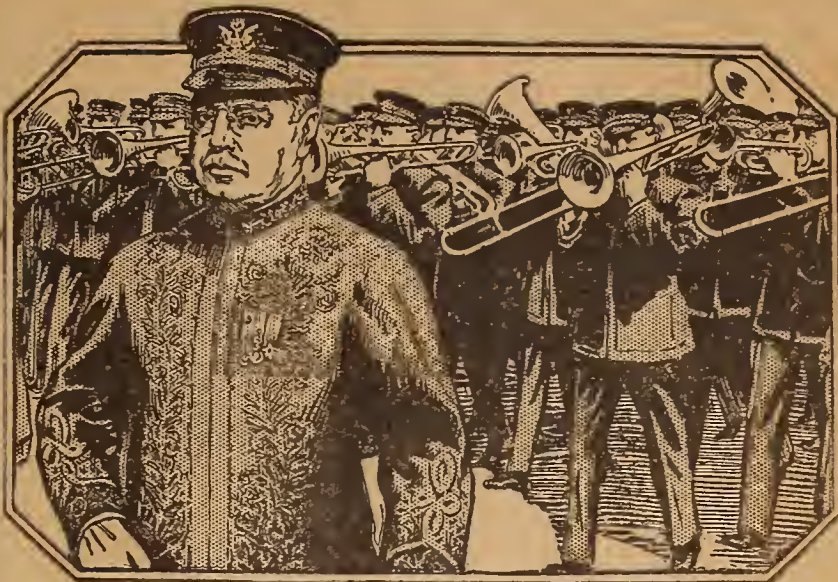
rest of the butter, flour, sugar, crumb-like mixture, and the cinnamon. Bake in a moderate oven thirty minutes.

PEAR PRESERVES FOR CHRISTMAS

2 pounds pears
2 lemons
2 oranges
1 cup sliced pineapple
1 cup water
1 cup pecan nuts
1 1/2 pounds sugar

Cook the pears, the juice of the lemons and oranges, and the pineapple, which is cut in fine pieces, over a slow fire for forty-five minutes. Then add the sugar and nuts, and cook until transparent. Place in jars, and seal with paraffin. The nuts and pineapple may be omitted if one wishes.

You can hear Sousa's Band any day when you have a Victrola



Your home, wherever it may be, is right on the line of march of Sousa's Band—of Pryor's Band, Conway's, Vessella's, U. S. Marine, Garde Republicaine of France, Black Diamonds of London, of the greatest bands of all the world. And every band *plays* as it goes marching by—on the Victrola. Plays the very music you want to hear and gives you the same thrill!

Victrolas \$25 to \$1500. Write to us for catalogs and name of nearest Victor dealer.

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Victor Talking Machine Co.
Camden, New Jersey



MENDETS—WONDER MONEY MAKERS

mend leaks instantly in all utensils, hot water bags, etc. Insert and tighten. 10c and 25c a package, postpaid. Agents Wanted. Collette Mfg. Co., Box 704, Amsterdam, N.Y.



Little Wonder Oil Stoves

Do as much with one gallon of oil as any other oil stove will with ten. Instead of 80% of the heat going to waste around the sides of the kettles, all of it is utilized in our fuel-saver top.

The ideal stove for Country Homes, Cottages, Touring, Camping, Yachting, etc. Pays for itself in one year by saving oil. One gallon burns 16 to 20 hours. Why bother with wood or coal or the old-fashioned oil stove that takes forever to get a meal? It boils a quart of water in three minutes and makes country cooking as easy as with city gas.

Guaranteed as represented or money refunded. The stoves will be handled through dealers everywhere. But if you want one this summer, send money order or check direct to factory and stove will be shipped at once with directions and guarantee.

Price \$17.50 f.o.b. Factory. Weight 30 lbs.

Little Wonder Stove Co.
3525 Gable Ave. Detroit, Mich.

GOOD LAND ON CREDIT 40,000 A. of clover, grain, and fruit land in Michigan's garden bed. 10 A. up. \$15 to \$35 per A. Mo. terms. Free booklet. Swigart Land Co., 11250, First Nat'l Bank Bldg., Chicago, Ills.

WALL BOARD

\$17 less per M

One million feet purchased from government

Our enormous purchase means rock bottom prices for you if you act quickly. Just the thing for making chicken coops, hen houses, stalls, rooms, partitions. Only \$38 per 1000 feet (regularly \$55).

4 ply board in panels 4 x 8 feet—and every panel backed by our \$10,000 guarantee of money-back-if-not-satisfied.

Manufacturers Outlet Dept.

Buffalo Housewrecking & Salvage Co.
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Prepare baby's food
according to the
Mellin's Food
Method of
Milk Modification



Send today for our instructive book.

**"The Care and Feeding
of Infants"**

also a Free Trial Bottle of
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Mellin's Food Company, Boston, Mass.

Doesn't Miss a Single Rat

When you use "Rough on Rats" you use the surest method of exterminating this dangerous, destructive pest. "Rough on Rats" gets them all in two or three nights. Mix it with one food the first night; change the kind of food the next night; use an entirely different food the third night. No more rats after that. Occasional use of "Rough on Rats" keeps them away. Druggists and general stores sell "Rough on Rats." Send for our booklet, "Ending Rats and Mice." Mailed free to you.

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PANTS NOW**

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Make Big MONEY You can earn \$25 to \$50 a week sending orders for your relatives and friends. Your spare time will do. COMPLETE OUTFIT and simple directions in first mail FREE.

Send us your name TODAY.

Chicago Tailors Ass'n, 515 S. Franklin St., Dept. H-612, Chicago

How to Get a Traveling Library in Your Neighborhood

By Helen L. Crawford

PERHAPS you have heard of or seen those little libraries that go traveling about the country, into homes, into schools, into crossroads stores—in fact, any place where they are needed. Their mission is to supply with books those of us who live out in regions too sparsely settled to support a permanent library.

You probably do know about them, but if your neighborhood isn't reaping the benefits of one I wonder if it's because you have never discovered how easy it is to get one.

The statement that it is easy must be qualified, however, by an if—if there is a state library commission in your State. If you don't know whether there is such a commission, why not write to the state library at your state capital and find out? These commissions have in their charge the extension of library service throughout the state, and are more than glad to help any community get a traveling library.

The main requisite is that there be at least six or seven persons in the community interested in the traveling-library idea. A small club is ideal for starting the ball rolling. The library commissions want at least half a dozen names signed to the request for a library, as, if they send out these little shelves of fifty books, they want to be reasonably sure that the books will be read.

What sort of books come in the little traveling libraries? That's the beauty of them—you can have about any kind you want. If you're interested in farm machinery and want to know more about it, there is probably the work of some particular authority you're anxious to read, but you may not feel that you can afford to purchase the book. That's just the time to put it on the list of books to be asked for. If you're interested in the subject but don't know of any particular book you want, just ask for some work on farm engineering. The librarian at the capital will select a good one for you.

Or it may be that you are interested in poultry-raising, or in home sanitation, or perhaps you would enjoy reading some good novels, either the old classics or something more modern; or your youngsters might like to know about the different trees and shrubs about your place, or they might like some good old adventure tales or some history. All these can be included in the bookshelf.

These little libraries can be set up in the home of someone interested—in the crossroads store, in the schoolhouse, any place, in fact, that is handy. If in the store, the storekeeper will be glad to act as librarian—there isn't any work attached, and it brings in trade. Of course, different States have different rules, and you'll have to find out what yours are from your state library, but in most States a community is allowed to keep one set of books for three months, with the privilege of having the time extended another three months. If all the books are read before that time, the set can be returned and a new lot asked for. The only charge for the use of these books is the charge of transportation, which depends, of course, on how far you are away from the distributing library.

This shelf of fifty books makes only a small library. If a community is fairly thickly settled, and is more ambitious, it can do as Owen, Wisconsin, did, and get up a real permanent library of its own. This is how Owen went about it.

The women of the Community Club got together one day and decided that just because they happened to live in a small town was no real reason why

they should have to do without a supply of good books.

They, like a lot of us, couldn't afford to buy all the books they wanted to read, and realized that if they had a library in town they not only would have a chance at good books at practically no expense, but others in town would also become interested in reading, would pick up new ideas, and the town as a whole would be more progressive.

This little club had only \$20 on hand,

pledged the assistance of the whole club.

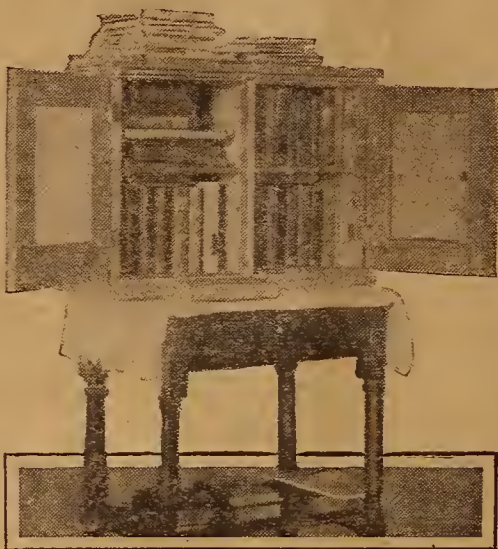
Immediately they got busy and worked out what we might call a publicity campaign—they held a public meeting to arouse the interest of all the citizens, and published articles in the newspapers telling about the library to be started and showing the advantages to be derived from it.

As more and more of the people in the neighborhood became interested, gifts began pouring into the room up over the telephone office, which had been secured to house the new enterprise. There were gifts of chairs and tables, lumber for shelves and bulletin boards, a clock, rugs and window shades; in fact, practically all the library furniture was donated, and this enabled them to spend more on books.

Then they ordered \$80 worth of books, and got the state library commission to help select them. They had 400 volumes, including the gifts, ready for circulation, and advertised the opening of the library with unique posters in store windows throughout the village.

The dedication was most thrilling. A public meeting was held in the school building; the mayor talked about the advantages of a library; a representative from the library commission told of the assistance that the commission would give, and one of the workmen told how he liked to read, and how fine it would be for all the people to have a public library. Then the village band played to lead the audience of two or three hundred persons through the main street of the town to the little telephone office building, and they all went in to see the library.

To form a permanent library in a town, it isn't at all necessary that there be a library commission in the State, although of course it is helpful. But if you are interested in starting a library in your town you can obtain all the information you need by writing to the American Library Commission at 89 East Washington Street, Chicago, Illinois.



A traveling library at home in a farmhouse, within easy reach of many book-loving folks

but the members had plenty of spirit, and saw no reason why they couldn't raise more. Their first step was to meet with the Commercial Club of the village and enlist their support. With their aid the village board was induced to make an appropriation of \$125 and appoint a library board. This board elected one of their leaders in the movement librarian, and she was

I Don't Know Which I Like the Best

By Mrs. J. R. Warner of New York

I WISH every woman had these three things in her kitchen:

A kitchen stool—made the right height for her to iron, wash dishes at her sink, and beat cakes at her cabinet. I never have been able to stand on my feet long without getting a bad backache, and had begun to feel that I never could be an efficient farmer's wife. But my farmer husband—bless his heart!—solved my difficulties by mysteriously shutting him-

self up one afternoon in his workshop. He emerged after an hour or so with a kitchen stool, and it is almost as dear to me as is my \$500 piano.

A built-in-cupboard for dishes over the sink. I used to have to trot into the pantry with my dishes, and I was trotting most of the time. Any cupboard except one that was built in would have been awkward and in the way in my kitchen. Now my dishes are washed and put away

in about half the time they used to demand, and I can use that extra energy that I spent trotting from pantry to kitchen and back again in some other way—doing some of the many things that we farmers' wives want to do but never find the time.

And, thirdly, a landscape window in the kitchen, with a window ledge wide enough for a plant box or individual pots for flowers. Why shouldn't Mother get all the light and view possible while preparing the food that is to keep Father and Johnnie well and make them efficient? She can't do it in a dark, gloomy kitchen.

It's a pretty good investment to keep Mother healthy in a light kitchen, with a window in it wide enough for her to see the blue sky and trees—say a window four feet wide by two feet high. And how her plants will grow on this window ledge!

Are You Prepared?

FC-132



IT WON'T be long now until fall days, when baby will need protection from the chilly winds. Here's just the thing to keep him warm and happy. For complete directions send four cents in stamps to the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio. Order No. FC-132.



"The Little Nurse for Little Ills"

Little Fred was out all day - sunburn

HE knew no better—but it hurt just as bad. He fretted till Mother applied

Mentholatum

A HEALING CREAM
Always made under this signature R.H.H.

Next morning he was as good as new. He learned his lesson—and so did the family. They found out, too, that Mother knows what to do—every time.

No more pain

Mentholatum is good for stings and bites of insects too—and for cuts, burns. Gentle, prompt, antiseptic.

Mentholatum is sold everywhere in tubes, 25c; jars, 25c, 50c, \$1.

The Mentholatum Co.

Buffalo, N. Y.

Wichita, Kans. Bridgeburg, Ont.

Those Blasted Bees!

[CONTINUED FROM PAGE 8]

said it was so funny, and "such a joke." I lost those bees; but, not being easily discouraged, I continued my inquiries, and one day while sitting in my yard I saw a swarm pass over. Instantly I remembered reading somewhere that bees could be successfully captured, when too high to reach otherwise, by shooting them down. Hurriedly grabbing the gun and my hive I followed them. Soon they settled in a tall beech. Under them I carefully placed my hive and, taking good aim, I fired straight at them. There was a large cluster—something like a half-bushel. The end of it was that, being a good shot, I hit them fairly, and the whole cluster fell to the ground. Did they mildly crawl into my hive as I had planned? Not at all. All of them saw me at once, and Scene No. 1 repeated itself. I ran. I had always been proud of my running powers, but I outdid myself that day. I was halfway up a mountain, but bushes and bluffs were not in my way in any manner. I went over every obstacle like a bird, and was soon wallowing in a small stream of water at the bottom.

At last I came to the conclusion that I did not know the habits of bees very well, so I wrote the Department of Agriculture to that effect, and they sent me their bulletins on bees, and with their help I have at last become a successful beekeeper. My love and interest in the honeybee grows with my years, but to anyone wanting to take up bee culture I would advise them to first call on the Department of Agriculture or get an experienced bee man to assist them.

Purebreds Profitable for Nebraska Youngsters

WEBSTER COUNTY (Nebraska) Boys' and Girls' Calf Club members recently held a show and sale. Twenty-five head of Shorthorns were sold for an average of \$336.40 each, and five Herefords for an average of \$370 each. One girl sold a calf for \$1,150. Several hundred dollars in prizes were awarded, former Governor and Congressman A. C. Shallenberger judging the show. The juniors purchased the Shorthorns six months ago for an average of \$150 each, and the Herefords for \$200 each.

In addition to the experience and knowledge they acquired, the boys and girls made a good sum of money both in profits and in prizes.

Don't Envy a Good Cook

[CONTINUED FROM PAGE 17]

some seasons the supply of berries and other fruits is bountiful. Puddings, pies, sauces, and all kinds of dishes can be made with them to advantage. In another year Jack Frost may make a late spring call, catching the blossoms and killing the fruit. The same recipes used a year ago in this case will not be useful.

And then, too, man's mind is at work continually inventing new food combinations which make cooking easier. It would take a long time, in most instances, for the message of how to use these foods to reach the housewife if one had to wait until a cookbook is published. Magazines are published frequently, and for this reason they have a splendid opportunity to give new, seasonable, and economical recipes to the housewife; they can keep in touch with the market conditions. Cooking is in a transitional stage nowadays. Sugar comes on and goes from the market, and the prices climb. The more foods the housewife knows how to prepare in palatable dishes, the better fed her family is likely to be.

In presenting recipes of merit, it has been recognized by housewives and editors alike that recipes must be standardized. Consequently all measurements are level, and in the best magazines they are tested to make sure that the amounts are accurate, and that the combination of ingredients is pleasing.

FARM AND FIRESIDE is the first farm magazine to provide means for having the recipes they print tested and made uniform; it knows that while the sound of a recipe tells the editor whether or not it is toothsome it in no way indicates whether the proportions are accurate. And, after all, one test in a real kitchen is worth more than reading a recipe ten times.



The Modern Farm Kitchen

is a joy to the woman whose "workshop" it is. Bright and cheerful with its set of "Wear-Ever" utensils that shine like silver, a woman is as proud of such a kitchen as she is of the other rooms of her home.

"Wear-Ever" Aluminum Cooking Utensils

make kitchen-work easier and more pleasant, and because they are so cleanly, food prepared in them always seems to taste better than when ordinary utensils are used.

"Wear-Ever" utensils cannot chip, flake or peel—are pure and safe.



Replace utensils that wear out with utensils that "Wear-Ever"



Look for the "Wear-Ever" trade mark on the bottom of each utensil

The Aluminum Cooking Utensil Co., New Kensington, Pa.

In Canada "Wear-Ever" utensils are made by Northern Aluminum Co., Limited, Toronto, Ontario.

9 Months to Pay

Immediate possession on our liberal Easy Monthly Payment Plan. Many parents advance the first payment and energetic boys by odd jobs make the bicycle earn money to meet small monthly payments. FACTORY TO RIDER prices save you money. We make our bicycles in our own three model factories. 44 STYLES, colors and sizes to choose from in our RANGER line. DELIVERED FREE on approval and 30 DAYS TRIAL. Select the bicycle and terms that suit you—cash or easy payments. TIRES, lamps, horns, wheels, sun-dries, at half usual prices. SEND NO MONEY but write today for the big Free "RANGER" catalog, prices and terms. MEAD CYCLE COMPANY Dept. H-83 Chicago



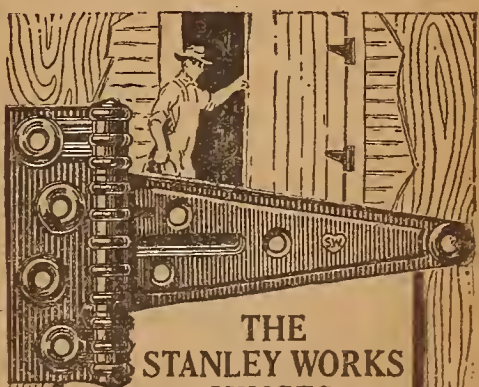
MAKE GAS IN ANY STOVE



THE INSTANT-GAS OIL BURNER Makes summer cooking a pleasure. Gives you gas anywhere, everywhere, in any stove or range. Everybody knows gas means cleaner, cheaper cooking and a cooler kitchen. Saves hours of time and loads of dirt. Start your stove with a turn of the wrist, turn high or low to suit and stop with another turn of the wrist. **FITS ANY COAL OR WOOD STOVE** Different models for different stoves. Just set it in the firebox. Put in or taken out in ten minutes. No damage to stove. Simple, safe, odorless, lasts a lifetime. Money-back guarantee. **SAVES MONEY** The Instant-gas Oil Burner makes its own gas from coal oil (kerosene) at one sixth the cost of city gas. Much cheaper than coal or wood. Because of perfect regulation the Instant-gas Oil Burner Cooks and Bakes Better than coal or wood in the same stove. No coal or wood to carry, no ashes, no chopping, shoveling or starting of fires. Greatest woman-saver in the world. Write for 30 day trial offer and free literature telling how Uncle Sam burns oil.

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INTERNATIONAL HEATING CO. 2854 Laclede Av. St. Louis, Mo.



THE STANLEY WORKS HINGES

It does not matter what type of hinges you need, you are sure of lasting satisfaction when you buy those marked with the "quality brand"—THE STANLEY WORKS: "T" Hinge No. 1437, pictured above, is corrugated to give greater strength and enduring service.

Ask your hardware dealer about it, and have him show you his entire line of THE STANLEY WORKS Garage and Bar Hardware.

THE STANLEY WORKS

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Ruth and Romance

[CONTINUED FROM PAGE 27]



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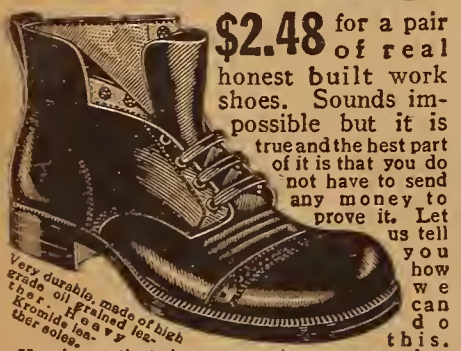
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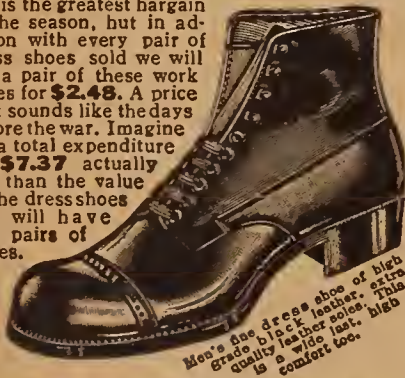
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strong and masterful, a very picture of adventurous romance, as he jerked up stone after stone to add to the heap beside her. But it occurred to the girl that a man of more sense would not have got into a position which required so much muscle to get out of. She had never seen Hiram in a situation to which he was not perfectly adequate.

With a few adjusting smashes of a flat rock on the second stone pile, the man at last sat down. He sat down very close to her, and he put his arm firmly around her. Ruth submitted so rigidly that he was annoyed.

"I'd like you to know," he said crisply, "that I'm enjoying this just exactly as much as you are. I won't be nasty enough to say I'm enjoying it less. But I happen to be engaged to a wonder of a little girl down in New York. Now put your head right down on my shoulder and relax."

Ruth's gentle blue eyes came as near to blazing as was physically possible, but in the dimness the effect was rather wasted. "I am sorry New York is so far away," she said.

"Amen!"

THERE was a pause. Despite the comparative warmth on Hastings' side Ruth was wretchedly, achingly cold. And she was indignant. This man had not been gentleman enough to offer one word of regret for his silly act which might kill them both. A sudden thought made her raise her head. "It would be disgusting to be found frozen like this."

"Put down your head or I'll take you on my lap and make you put your arms around my neck," the man threatened. "And, in heaven's name, get over the idea that you're the one abused. We're in a tight place, and I'm doing the best I can to get us out. But the fuss if you should be found frozen in my arms would be nothing to the celebration if I should be found frozen in your arms. The darling little fire-eater! Yes, I'd much better be dead when Belle hears of it!"

"You mean that Hiram wouldn't care—if I were—?"

"Of course your Hiram would care—in his way. But not in Belle's way."

There was silence for what seemed a long time. Finally Ruth was obliged to speak. "The water runs down your face and just drenches me!" she complained.

"That's gratitude!" was his ironical comment. "Instead of thanking me for warming up this water which reaches me first, mind you, you're peeved that you get it at all. I'm afraid you're no sport, Miss Goodnow."

"I don't care to be a sport," she answered back like a child. Childish, too, she was close to tears.

"Well, if you don't like this, climb into my lap, little one." He spoke between his teeth. "Double weight will be blissful on a soft stone cushion like this under me."

Detesting him as she had never before detested anybody in her whole placid life, she was still glad to obey. She was numb to the knees and he had almost to lift her to his lap.

"Put your arms around my neck—tight." He wrapped his arms about her—tight.

RUTH remembered the story of the lovers bound breast to breast and thrown into a river. She appreciated now the fiendish penetration of the punishment. It had become quite dark, and the splashing of the water, multiplied by the cavernous recesses, was the only sound.

"I'm nearly starved!" the girl whimpered at length.

She could feel the man shake with suppressed laughter.

"Well, blubber is perfectly good arctic food," he chuckled, "and I'll bet you could supply us both."

Ruth had felt herself pretty brave up to that point. And this coarse creature on whose lap she sat, freezing, had scoffed at her first sign of weakness as "blubbering." But she choked back her anger with her tears. Again there was a long interval in which they heard only the rush and echo of the water.

"Doesn't it seem after dinner-time to you?" he asked.

"It seems like day after to-morrow to me," she replied forlornly.

"If it were day after to-morrow it would still be to-day." He seemed to be going out of his way to be disagreeable. "I fancy

it's about nine o'clock. Time to take my own rescue measures."

Ruth sat up and looked at him. She could not see him, but one couldn't ask a vital question burrowed in a man's neck.

"You mean you can do anything?"

"Possibly. It will be pretty hard on you and on me, so I didn't want to try it except as a last resort. But this is the last resort—the last resort I ought to have come to for a holiday, eh? Holiday!" he groaned. "I'll take jail for choice, next time. But we ought to do our darnedest for the sake of Belle and Hiram. Can you stand up?"

She felt for a footing among the stones, wondering dully at the manner of man that could pun in the closed jaws of a glacier. The pull of water told her that she had thrust her foot into one of the many trickling brooks, but her foot was too numb to feel the water. She tried again, and would have fallen except for Hastings' arms.

His voice showed his anxiety.

"Phew, I hope I haven't waited too long! Belle is always fitter than I at the end of a jaunt, and I judge other women by her. Back to the stone pile for you."

He lifted her to it, and she managed with his help to adjust herself as he prescribed.

"Sit on one heap, put your feet on the other. That brings your knees up so that you can lay your forehead on them. Wrap your arms around your shins." He tightened her soggy skirts about her. Then something warm was laid across her shoulders. It was his coat.

"Oh, but I can't let you do that!" she protested. "You'll die—"

"Hush!" he said sternly. "It isn't a present. I shall be working near the entrance just the other side of the block that fell. The largest opening is at that point, and I'm going to try to enlarge it by taking the stones from the glacier bed. The rock isn't solid there. The water will flow in as the stones come out, and my hands will get very cold. Every little while you'll have to warm them. That's how you'll pay for the coat. Breathe with all your might. And think of Hiram and Belle."

RUTH set herself to breath for her life. The noise of the water was broken now and then by the fall of a stone, as her solitude was broken at intervals by the man's return. She exclaimed with pity as she touched his wet, icy hands, and she did her best to warm them, breathing upon them, chafing them.

"Think you can stand it a little longer?" he would ask; and for very shame of sitting there up out of the water, wearing his coat and doing nothing, she would reply, "I can if you can." And presently the stones would begin again to clink and splash.

There were stars, but no moon, he reported at last. It began to take longer to warm his hands, as she had less warmth to give, and he said, "Twice more and maybe we can make it," then, "Once more," and finally—it seemed to the girl that he spoke from a great distance—"We'll try it now."

He shook her and slapped her shoulders and rubbed her hands and stood her on her unwilling feet.

"Never mind getting wet now. Step right along!" he called.

Ruth's legs doubled under her as if they had been asleep.

"I can't."

"Can't! —!" He stung her awake with a liquid word which suggests no liquid at all. "You've got to."

It had been years since Ruth had been told she'd got to. But that wasn't the worst of it. She had got to. She stumbled along with his help.

"Now I'm going to try it first," he said loud and distinctly, as one speaks to a foreigner. "As I'll be half under water, you will keep my stick and coat until I ask for them. Of course, the opening may not be big enough or some other trouble may develop, so I shall have to come back. You're not going to faint or anything?"

Ruth mastered an impulse to clutch his arm. Instead she felt for the stick and coat.

"No," she said shakily.

"All right. Here—" he took her hand and touched it to an ice cake—"is the block that fell. To the left, way down, is the opening. Steady, and we'll turn the trick. Good-by."

"Good luck," answered the girl, and brought all her fortitude to the task of standing upright.

There was a scramble, a gasp, a rattle of stones, a pause—and at last his cry from

David Blair's Column

JUST as a man is judged by the company he keeps, so are advertisements known by the publications in which they appear. You stand a good chance of losing money if you don't keep this in mind, because practically every day of your life you buy advertised articles.

Often you want to buy something that means the investment of considerable money. Your final selection depends largely upon advertisements. You read them carefully, make comparisons, and get all the information you possibly can before you go ahead.

In such cases particularly, it pays to consider the source of the advertisements. If you read them in Farm and Fireside, you can be sure that they are reliable, that they represent goods exactly as they are. Consequently, when you buy from Farm and Fireside's advertisements, you are assured of satisfaction.

We censor carefully every advertisement published. Only the most reliable manufacturers and merchants can use space in our magazine. It is almost impossible to even estimate the tremendous saving made by our readers as a result of our policy of "guaranteed advertisements." During the past year we have turned down thousands of dollars worth of advertising in order to protect you and our 750,000 other reader friends.

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David Blair
Manager Subscribers' Bureau

FARM & FIRESIDE
The National Farm Magazine

outside. Then his voice, very near between the glacier and the top of the ice cake:

"Try pushing the coat over the top with the stick."

In an instant the stick was pulled out of her hand and the voice came:

"I've got it. Come on."

She knelt down and felt for the opening.

"Come on!" repeated the voice sharply, and now it was on a level with her own. "You're so cold you won't mind the plunge much. I'll help you as soon as your head's out. Just crawl along. But be sure your head's up."

After the first flow of the icy water over her wrists it was all frigid horror. But she kept her head up. And presently strong hands seized her and dragged her, drenched and chattering, to the comparative warmth of that chill mountain night.

A MILE away—impossibly far away, a down-hill though it was—the lights of the hotel glittered. It added the final touch to her misery to know that Hiram and the mothers were enjoying that warmth and luxury in ignorance of her extremity. And she would have to go into the hotel—if ever she lived to reach it—before all the guests, in this state!

With one arm around her waist, the other hand under her elbow, Hastings did his best to support her, but her ankles repeatedly turned under her as they felt their way over the loose stones of the glacier bed in the direction of the path. Once on this, the going was less difficult, but Ruth's consciousness of her own exhaustion became more acute. She had never been so aching cold, so draggingly tired—nobody had. Her limbs almost refused to move against the clogging weight of her wet garments.

Then faintly, more clearly, decidedly, the beat of horses' hoofs reached them.

"Coming up, too, by the gait," said Hastings excitedly. Releasing her, he put his hands trumpet-wise to his mouth and gave a great shout.

At once came an answering halloo in the practiced voice of a mountaineer. Ruth had hoped it would be Hiram, but this was no time to choose among rescuers. With renewed strength she started toward the sound.

At the very end of the road, indeed, as they approached, they saw the outlines of the horses by the light of a lantern held between the driver's knees. Coming toward them up the path another lantern swung in the hand of a man. His step was hastier than usual, but it was familiar. It was more than familiar.

With a cry and an access of energy which would have seemed impossible a few minutes before, Ruth broke from Hastings and flung herself upon the hurrying figure.

"Hiram!" she cried. The name stood for all that was dear and sheltered and safe.

HIRAM'S right arm went protectingly round her. The other held the lantern carefully clear of the dripping figure.

"I thought you might be in trouble," he said. "Better get started for home before you talk." At the buckboard's side he handed the lantern to the driver. "Cover both lights for a minute!" he ordered. As the man obeyed, he whispered to Ruth. "Take off that wet skirt. I've got a steam-rug here."

In a moment she was wrapped with a hot-water bottle in the rug, and tucked up on the back seat.

"Lights again!" He halted the driver as he gathered up the reins, and, unscrewing a thermos bottle, he poured a white cupful and held it to the girl's lips. It was hot milk. Then he stepped up to Hastings, who had waited at a decent distance, and the two held a low-toned conference.

"I thought of that possibility when I got back to the hotel and learned that the guard was off duty," Hiram said as he turned again to the vehicle. "But jump in. You'll find room on the middle seat if you care to share it with some pickaxes and the first-aid kit."

"Thank you," replied Hastings stiffly. "I prefer to walk. Good night, Miss Goodnow! Good night, Babbitt!"

At first Ruth was too exhausted to do anything but enjoy the stealing warmth of hot milk inside, and the hot-water bag and Hiram's arm outside, but as the gentle stimulant took effect and the comfort spread, she found voice to tell of the adventure.

"I suppose our mothers are dreadfully worried," she finished.

"Worried? Oh, no—they aren't expecting you yet. I was the worried one. All through the drive I felt uneasy. Hastings is a handsome fellow—maybe I was jealous." Hiram laughed unnaturally.

"Silly!" Ruth flouted the idea, but it gave her a deep inward satisfaction.

After an interval the man resumed:

"And it struck me that he'd be just foolhardy enough to take you into the glacier. At theivery office they told me that the watchman was sick. So I left word that I had an errand that might make me late to dinner, routed the old fellow out, got these things together, and started up here."

"How exactly like you, dear, thoughtful boy!" she murmured. Then her voice grew tragic, but she kept it low that the men on the front seat might not overhear. "And while you were coming to the rescue, I was sitting on his lap to keep warm! It was horrible. If anything could have been worse, it would have been Belle."

FOR a moment there was silence in which Ruth half regretted mentioning this episode. Then "Who is Belle?" inquired Hiram constrainedly.

"The girl he's engaged to. She lives in New York. She's a good sport—he says I'm not. He was so surprised when I got tired and couldn't heave great rocks around!"

Hiram seemed to breathe again. "No accounting for tastes. Personally, I don't want an Amazon for my wife."

This was comforting. Yet she could not accept his satisfaction with her before her confession was complete.

"But the worst of it was, Hiram," she said slowly, "that I wanted to go with him. It seemed so—so romantic."

Hiram's ready acquiescence gave her in turn a twinge of jealousy.

"Probably everybody feels so at times," he rejoined in his natural, matter-of-fact voice. "I shouldn't want to marry her, but I've had moments when his Amazon would have appealed to me!"

Ruth could hardly credit that it was Hiram, the cautious and moderate, who spoke.

"But I don't believe she's the least bit suited to you," she said wonderingly.

"Certainly she isn't," Hiram agreed cordially, "any more than her man is suited to you. If ever I'm in danger of forgetting it, I'll think of your adventure to-day. But those two are probably very well matched. So are we."

A great truth seemed borne in upon Ruth.

"Why, of course we are!" she exclaimed. With a quick glance at the men in the front seat she turned, and brushed Hiram's cheek with her lips. "Oh, I'm so glad that I'm going to marry just you!"

[THE END]

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PROF. C. LARSEN, director of agricultural extension at South Dakota State College, of Agriculture, gives four good reasons for organizing coöperative livestock shipping associations, as follows:

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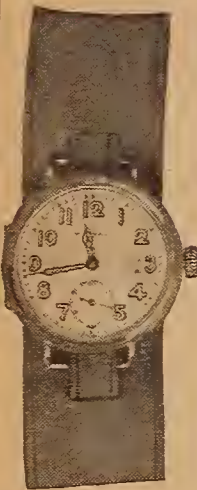


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What the Right Kind of Silage Will Do for Your Cattle

By J. A. Anderson

A FEW months prior to his death Frank Davis of Holt County, the oldest and best-known cattleman in northwest Missouri, finished feeding his sixty-ninth annual crop of corn. He had raised nine crops for his dad, and sixty for himself. Nearly all his own corn crops had been fed to cattle—the last five crops as silage.

seasons' use. They are without covering. "As for the rain and snow that may fall into them," said Mr. Davis, "I consider it a benefit rather than a detriment. And without roofs the silos may be filled much fuller than if covered."

"We have used these silos every season since they were built, and I've been greatly

raise, owing to the danger of their getting stunted during the winter. The common practice, therefore, is to select likely-looking gilts from the fattening yards and set them aside for breeding purposes. Owing to the uncertainty of getting good breeders, a larger number than would ordinarily be necessary are set aside, it being reasoned that there must be a certain number of failures anyway.



Here is the battery of silos that Frank Davis of Holt County, Missouri, used to fatten 13 carloads of steers in 100 days. Facing a severe loss, Mr. Davis, by careful buying and skillful feeding, managed to clear \$3,000 on the transaction.

"There is no better feed on earth than good silage," Davis said to me at his Holt County ranch. "By good silage I mean corn that has at least 40 bushels of grain to the acre, cut at the right time and tramped solid. For use in the fattening pen—the way I have used it—I should not consider silage profitable unless it carried that much grain."

He had just sold the last 13 carloads of steers, which he had fattened in approximately 100 days on a ration of silage and cottonseed meal. With the contents of four 250-ton silos the cattle made an average daily gain of 2½ pounds. One full month of rushing work and 110 acres of 70-bushel-an-acre corn had gone into the silage, with labor high and corn at \$1.25 a bushel.

During the feeding period the cattle gained approximately 58,830 pounds. Because of the high cost of feed the return on just the grain alone would have lost him \$5,000; but, being a wise feeder, Mr. Davis laid in his cattle at a low cost, and made \$3,000 on the entire transaction.

"Though I can't say silage made me any money," remarked Mr. Davis dryly, "I'm sure I'd have lost more without it." Silage is the best conditioner I've ever fed. In the drove of 280 we didn't have one sick steer. One year I fed 350 head on silage, and had only one steer that scoured.

"WECUT our corn just as the grains begin to dent. If it gets drier than that we use water. The stuff must be wet, and all the air must be tramped out of it. These are the secrets of good silage.

"To pack the silage in our four 20x40-foot silos we use goats—twenty in a silo, with one man to distribute the silage evenly and another to drive the goats. They are lowered to the ground with a rope round their horns.

"Our silos are in pairs, with a feed chute between the units of each pair, so a wagon may be driven directly underneath. We never have any spoiled silage because, first, we tramp all the air out of it when we put it in, and, second, we feed it out faster than it can spoil.

"Silos of this size are supposed to hold 250 tons each, but I figure we had 1,250 tons in ours, because we used well-eared corn cut sufficiently wet and thoroughly tramped. This makes double the feed that the same space holds if the corn is chaffy, too dry, and carelessly packed."

These silos on Mr. Davis' Holt County ranch are built of hollow tile, slushed inside with cement. They were erected in 1913 at a cost of \$2,500 for material, transportation, and skilled labor. The men on the ranch did all hauling and scaffolding, outside this cost.

This type of silo on the Davis ranch has suffered no depreciation whatever in seven

pleased with results. I should dislike, especially with corn so high-priced, to try to make anything on cattle without silage."

Why I Keep My Old Sows

I LIVE in the heart of the Iowa hog belt, and consequently have ample opportunity to observe the practices that prevail with respect to the selection and keeping of brood sows. Probably 90 per cent of the hog breeders in this part of the country fatten and dispose of their sows after they have weaned their first litter of pigs. Two reasons are assigned for doing this: First, that it costs too much to carry the sow through to the next farrowing time; second, that fall pigs are not profitable to

It is my observation, too, that pigs from old sows invariably attain size and weight faster than those from young sows. At an age of six months I have frequently noticed a difference of as much as 50 pounds. In these days, when time counts for so much, this factor is very important.

The objection that it costs too much to winter old sows I do not consider well founded. At no time should sows be very fat. To keep them in moderate flesh does not require a great deal of feed. The sow will be much better off if she has to hustle some for a living. It is surprising what a small amount of food will carry a sow through the winter, if she has a warm bed.

Considered from many angles, I believe it wise to retain the good brood sows.

E. V. LAUGHLIN, Iowa.

Why I Left Iowa and Came East

[CONTINUED FROM PAGE 9]

ripens in 90 to 100 days. It made 45 bushels to the acre last year, but we are going to increase that yield as soon as we get the ground built up a little. Of course, we want corn mostly for ensilage. Oats will make about 35 to 40 bushels. The timothy made a ton to the acre. The clover, alsike, and timothy mixture will make, in two cuttings, about two tons to the acre.

Some of you fellows that are used to farming big places are probably saying, "What a dinky little place! How can they make anything on it?" In this part of the country 100 acres is a good-sized farm. If you are dairying and can't get any help, you don't want any more land. You can make a very comfortable living and lay something away on a place of this size. Many farmers are doing it on smaller farms. It is very important that you get a good farm. There are a lot of places around here that I wouldn't have as a gift if I had to farm them. There is a lot of good land too, especially the better hill farms, and some of the bottom land, such as that found in the Genesee Valley, is hard to beat.

MOST of the farms have good buildings and improvements, and are equipped with tools and machinery. Some have cattle and horses that are sold with the farm. You can often get very good bargains in this way. But don't be fooled by good buildings and equipment into buying a farm without careful examination of its soil.

I have been advising my friends to come because it is still possible to buy a good farm here for considerably less than \$100 an acre. Much of this land is potentially worth more when you compare its produc-

tiveness with that of high-priced land regions where speculation has been active. There has been little speculation here as yet, but gradually land prices are going up. We wouldn't sell this farm now for a cent less than \$6,500. I understand that there are many other parts of New York and other Eastern States where farms can be bought just as cheap, but we liked it here and saw no reason for looking farther.

HERE are a few don'ts that I would advise you to consider before buying a farm in this region:

Don't expect to find a gold mine. You must work to make a living out of the best land anywhere.

Don't forget that this is a dairy country, and that our farming methods are necessarily different from those practiced in the corn belt.

Don't be led astray by smooth real-estate agents. Look around carefully by yourself before you go to the agents.

Don't try to buy a farm with only a few hundred dollars capital. Some agents will sell you land with an initial payment of \$500 or less. You ought to have at least \$1,000 to pay down on your place, and \$1,000 or more for working capital.

Don't buy a farm, no matter how good it looks, without the advice of some competent and unprejudiced person who is familiar with it and the surrounding country. Go to the county agent or to a good farmer. Get an expert from the college of agriculture to advise you if you can't find any local person to do it.

NOTE: If you want to know more about Eastern farms, write to us at 381 Fourth Avenue, New York City, and we will do all we can to help.

EDITOR.

This is the Month I Start My Fall Garden

By R. F. Francis

IN MOST August gardens you will not find any young crops. There may be plenty of things that are yielding, but nothing planted to supply the fall table.

Many spring vegetables that are discontinued during the summer because they will not stand the heat can be grown again in the fall. People are not in the habit of planting them then, and this, in all probability, is partly because the seed catalogues do not come out in the fall.

Vegetables that can be planted August 1st, or soon thereafter, with a fair chance of maturity, except in the most northern States, include dwarf beans, extra early varieties of sweet corn, especially Golden Bantam, cress, kohlrabi, lettuce, peas, spinach, radishes, and turnips. In addition to these, if the plants have been started previously, you can have cauliflower, cabbage, celery, and tomatoes.

These things will constitute quite a complete garden. Even if you do not attempt to grow them all, you should be sure to plant beans, lettuce, spinach, and turnips. The surplus will be in fine condition for winter storing and canning.

THE great secret of a successful fall garden is to give it a good start, and by adopting the following simple methods it is possible to get a good stand in almost any season:

Pre-sprouting will get your plants up quickly in all but the very driest of weather. Pre-sprouting consists simply of soaking the seed from twenty-four to forty-eight hours in water before sowing it. Seed that has had a chance to swell and reach the point of germinating will often be up in three or four days. In a dry soil it may lay dormant for a week or longer.

Another method is to soak the furrows thoroughly before planting. In dry weather it is always especially important to firm the soil over the seed. This can be done with the back of the hoe or rake. If there are several long rows, running a wheelbarrow with a moderate weight in it will do the job nicely.

Since we put in the watering system which I described last month, we have not had to take any of these dry-weather precautions. All we do is sow the seed, "turn on the rain," and the little green

lines will break through the soil within a few days. But for those who do not have an irrigation system the method suggested above will be found most helpful.

In making these late sowings, only the earliest varieties should be used. Bountiful and Brittle Wax beans, Golden Bantam corn, Mignonette or Cos lettuce, Blue

running twenty-five years at the Ohio Agricultural Experiment Station, has proved itself to be superior to acid phosphate, which has generally been accepted as the most efficient phosphatic fertilizer.

In the twenty-five-year tests with potatoes, wheat, and clover, acid phosphate increased the yield of potatoes an average of



This is Mr. Francis starting his fall garden

Bantam and Little Marble peas, Victoria spinach, Early White Milan and Petrowsky turnips, Snowball or Best Early cauliflower, and Copenhagen Market or Floria Enchusen cabbage are varieties which we have found very successful for late sowing.

Basic Slag and Your Crops

IN WRITING of fertilizers, editors and agricultural investigators have been prone to overlook one very important carrier of phosphorus: basic slag, in tests

31.18 bushels a year, while basic slag increased the yield 37.19 bushels. With wheat the difference is still more striking, the increase for acid phosphate being 9.88 bushels, while for basic slag it is 12.87 bushels. With clover, acid phosphate caused an average increase of 635 pounds, while basic slag boosted the yield an even 1,000 pounds. Figuring the profit on the rotation, after deducting the cost of the fertilizer, leaves a net gain for the twenty-five years of \$9.28 in the case of the acid phosphate, and \$15.67 in the case of the basic slag. With the five-year cereal rotation acid phosphate does slightly better than basic slag, but at the Strongsville Station the basic slag comes out ahead.

Basic slag has several advantages over acid phosphate. As the name implies, it contains enough lime to make it alkaline in its reaction. It actually has a sweetening influence on the soil, instead of being acid as is acid phosphate. There is not enough lime in it to make an acid soil sweet unless very large quantities are used, but on a soil where the balance between acidity and sweetness is very fine it would seem important not to turn it the wrong way by adding more acid. In Europe it is sometimes called Thomas phosphate powder.

BASIC SLAG is a by-product of the steel furnaces. There has not always been an adequate supply. Before the war much of the basic slag used in this country came from England and Germany. That supply has been largely cut off. Now the steel furnaces of the South are beginning to produce it in large enough quantities to make a considerable amount available for commerce. The price has not advanced as much as acid phosphate, so that it really is a cheaper carrier of phosphorus than acid goods in many localities. It usually contains between 12 and 20 per cent phosphoric acid.

We have been using basic slag successfully on the home farm in Ohio for a great many years. Back in the early nineties, my father started the first alfalfa to be successfully grown east of the Mississippi River. The soil was naturally adapted to alfalfa, and it got inoculation from some unknown source.

Woodland Farm has been growing alfalfa ever since. All kinds of fertilizer materials have been tried, but none have proved as satisfactory as basic slag, except on the mucky land, where potash must be used. There are many instances, no doubt, when acid phosphate should be used, but the results obtained at the Ohio Station would indicate that basic slag should be given a fair test on every farm.

Suggestions to Western Men

[CONTINUED FROM PAGE 9]

States. In almost every county there are some good valley farms, even if most of the region is composed of unproductive hills. In other counties nearly all the land is level. The Western plains really begin at Syracuse, New York.

As to lime, the soils vary from limestone to those that are very deficient in lime. A little patch of alfalfa may indicate no more than a banana in a greenhouse; but if the farms in the region generally have alfalfa and red clover in considerable areas, it is certain that the region is not very deficient in lime. But even then some of the farms may be short of it. Farms deficient in lime are practically always short of phosphorus.

If one has enough money he will usually do best by buying a farm that grows good crops of red clover or alfalfa every year, and that has Kentucky blue-grass pasture and good buildings. If he has not enough money to buy such a farm, he may, of course, do well by buying poorer land and devoting some years to making it productive. Good land rents for one half the crop, and the landlord pays half the seed, threshing, and some other bills. If one buys a farm that is producing only half a crop, he is worse off than a tenant on a good farm until he gets the land in better condition.

AVERY common mistake made by Western men when they move East is to believe that the Western type of farming should be started here. There are many good ideas that can be brought from the West, such, for example, as driving more horses per man, but there is one hundred years of experience as to the best type of farming in the region.

It may be that a change in this type will



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Can Sex Be Predetermined?

By S. Newton Strickler

SEX determination of eggs is not only a matter of recent inquiry and research, but that it has held the attention of thinking men of all times is proved by the fact that even three centuries before Christ men had worked on the question.

Most noted among the investigators were Aristotle, Pliny, the elder, and Columella. In his eighth book, Columella says the best time to set eggs for pullets is from the tenth to the fifteenth day of the month, when the moon is increasing.

Naturalists of to-day are still searching patiently for the much-desired solution. Of the many numerous theories that have been evolved, the following are a few of the most popular:

Long and pointed eggs are of a masculine nature, while the short, round ones are feminine.

Eggs laid before noon contain a certain sex; those after noon, the opposite.

All newly laid eggs, if placed under the hen immediately, and up to five days, will produce cockerels.

Eggs when set pointing to the north produce cockerels; pointing to the south, pullets.

If the apex is marked with a zigzag quirl, the egg is masculine; if round and without any indentation whatever, it is feminine.

SOME years ago a prominent group of English poultrymen met at a London hotel to witness a demonstration given by a fellow poultryman, who claimed that he had invented an instrument able to foretell sex of poultry, rabbits, and mice. The invention consisted of a small pith ball suspended at the end of magnetized steel or copper. When held over a male fowl, the ball would rotate; when repeated over a female, the ball would swing to and fro, pendulum-fashion.

The X-ray, as yet, has been of very little value in determining sex, which is but natural if we stop to consider what students of embryology tell us. Summed up, it is this: The first few days the chick in embryo is asexual. On the seventh day it is distinctly hermaphrodite—that is, containing the elementary organs of both sexes. After the seventh day, one set of organs dimin-

ishes as the other increases. The merest accident may determine future sex of the bird, as the nutritive values obtained from pabulum react on growing organs of sex.

Thus, since the germ of life can have no sexual attributes, it is obvious that the pendulum theory falls to the ground.

Sex investigation is not only limited to fowls, but includes all forms of life; and it is safe to say that we have not yet solved the riddle, despite the fact that medical science has taken very rapid strides in the past few years.

21 Big Points to Watch

[CONTINUED FROM PAGE 11]

and the association work brings them together if it is properly handled by the right kind of a leader.

Twentieth—Join with other local associations when the time comes.

For instance, if there are several small associations in the same community, but handling different kinds of farm products, it would make cooperation stronger in the section if all of the branches were gathered into one main society, similar to what has been done in the various States where livestock breeders' associations have been organized. In many States the sheep, cattle, hog, and horse breeders have associations, and all of them are grouped into one state livestock association.

Twenty-first—Court and seek the friendly assistance of business and city people. Try to cooperate with city folks, because in communities where the villagers and farmers have a friendly feeling, mutual good results. Often the business men will fight a cooperative association, especially if it is a store, insurance company, telephone company, or any business where they are directly affected. But, as a rule, all right-thinking business men welcome such organizations among farmers.

If you want more specific information about a particular kind of cooperative organization you are planning in your community, and will write to FARM AND FIRESIDE, 381 Fourth Avenue, New York City, we will try to put you in touch with the right people. EDITOR.

What Kind of Power Plant Do You Need?

[CONTINUED FROM PAGE 16]

discover that the little portable motor is much more dependable than the boys for turning the grindstone. The lights are so handy in the house and barn that we will put them in other buildings. We will hear Neighbor Jones tell at Farmers' Institute how he increased the production of eggs by lighting up the poultry house in the morning and evening, and so on until the load is much greater than the plant was originally designed to carry.

It is much better to study out the possible load, whether the various utilities are purchased at once or not. Buy a plant that will allow of expansion without injury. It is even better to have an extra gas engine around to perform regular rather heavy tasks than to overload the battery.

It is safe in this connection to review carefully the manufacturer's specifications rather than to accept the word of an enthusiastic salesman. More than one plant did not run out its full life because, in his anxiety to sell, the salesman made extravagant claims regarding the capacity of the plant, and more especially that of the battery.

The question that will naturally arise is: "Shall I purchase a direct-connected or a belt-driven unit?"

If the plant is to be used for electric lighting only, the answer is easy: "Yes, by all means a direct connected unit." There is practically no loss of power between engine and generator in this type of construction. It is compact and simple, requiring but little space, with freedom from belt and shaft troubles. If the plant is to be used for power as well as for lighting, then other points must be considered. If the power units are small, requiring less than one-fourth horsepower, the answer is again in the direct-connected unit. The power units of more than one-half horsepower ought not to be driven from one of these small plants. If motor drive is wanted, then a large plant must be selected.

In the example given in the fore part of this article, there was no question but that the belt-driven plant was the best choice, and it has worked out well in practice. Convenience is really the great argument in favor of the electric motor. The more steps taken in the transmission of power, the greater will be the losses. Therefore, if one takes power direct from the engine pulley, there is likely to be less loss than as if the same motor were used to drive a generator which in turn furnishes current to drive an electric motor.

Each step of transmission means a loss of from five to fifteen per cent in the case of electrical transmission and gears, belts, and shafting. In low-voltage plants the loss of current in transmission increases very rapidly with the distance that must be traversed by wires. This is a point that must be remembered where it is proposed to locate a motor in an isolated place some distance from the batteries.

SUMMING up, we may say that, on most farms, only one source of power is not economical on account of the varied power requirements of various machines, unless the machines happen to be all within a small limit in power variation. The small electric plant is economical for lights and for the convenience it gives in small portable motors. The belt-driven outfit may be best under conditions where a number of rather large machines may be driven simultaneously. This is true also where the engine is used independently on machines requiring from four to six horsepower.

If natural gas is used for lighting, it may also be used for driving engines. The wind engine or windmill is a prime mover that should receive more attention, especially in those regions where the wind is rather constant. Gravity, our cheapest source of power, is available in many places where there is an abundant rainfall and the country is quite rolling in nature.

Grading Puts Profit in Produce

By J. T. Bartlett

THE Providence Farmers' Exchange, a Rhode Island cooperative farmers' organization which wholesales large quantities of vegetables, has adopted clear-cut grades for everything it handles, from the plebeian turnip to the epicurean melon and asparagus. Each farmer member grades his produce before it leaves the farm, packs expertly in crates and boxes, and labels each package with a plain-printed sticker indicating the grade. The same label bears the farmer's special number, so that the central organization can quickly trace quality complaints. Exchange members are bound by a stiff contract to observe all grading regulations.

It would seem a difficult matter, for example, to distinguish accurately four grades with such a perishable vegetable as sweet corn. The Providence Farmers' Exchange accomplishes it successfully in a professionally exact manner.

Fancy grade is "kerneled to tip, in the milk, perfectly fresh and uniform size." Grade A is "freshly picked, in the milk, and well kerneled." Grade B is "over or under matured, and short." Grade C is "culls."

Providence farmers voluntarily undertook careful grading. This is in the interests of middlemen and ultimate consumer, but much more to their own advantage. They have prospered amazingly with their venture. The exchange sells vegetables by the carload to New York, Baltimore, and other cities, besides keeping the Providence market in healthy shape. In the East, 1917 and 1918 were very difficult years for market gardeners, owing to high labor costs and the keen competition of war gardens, yet Providence, adhering to its progressive grading and selling plan, prospered.

VEGETABLES, like most other farm products, have always been graded, except in local markets, where producer and consumer come in actual contact; but the movement for expert grading of farm products at the source is comparatively new. The old way was for wholesalers to attend to grading. The egg trade for many years has been on such a wasteful basis, with enormous quantities of bad eggs transported hundreds of miles, only to be discarded by city candler. Annually the quantities of inferior potatoes, onions, and other winter vegetables culled out in city warehouses is immense. The economic loss in wasted transportation and handling labor cannot be figured, but its great size is very apparent. Every corner of the country is affected.

The war gave a strong shove to the movement for grading at the source. The Food Administration put in operation as an emergency measure a rule compelling country egg dealers to ship only candled eggs, thus forcing penalty for the discarded eggs directly on the offending farmer. Official grades for potatoes were established; potato associations got behind the movement; individual States passed grading laws. Potatoes are the staple American vegetable; from the leading producing sections—Aroostook, Idaho, and Colorado, Michigan, and Minnesota—they are transported by the thousands of carloads to distant markets. As they are bulky, transportation and handling are important items in the final consumer price. Present indications point to quick transition of the American potato industry to a strictly graded basis.

Without stringent grading, the Pacific Apple Belt would have been involved in nearly hopeless demoralization. Strict apple-grading is now compulsory in New York, and the movement is spreading fast. Expert grading at the source is the foundation on which the California citrus industries have built up their cooperative national business.

It is easy to see why farmers have been seemingly slow to undertake close, conscientious grading. As individuals, not much incentive was offered them to do so.

The whole system of country buying was on the basis of supplies offered ungraded, and the man who produced a superior article, as, for example, in eggs, got no more off the country buyer than his neighbor whose eggs weighed several ounces less to the dozen, were dirty, and of doubtful quality.

When local buyers offered one price for potatoes, irrespective of quality, the farmer naturally sold every potato he could collect—not much minding if dirt rather liberally clung to the tubers. The new system will benefit everybody, but the farmer most of all.

How to Increase Your Horse's Efficiency

THE efficiency of the average farm horse can be increased 25 per cent by the observance of these simple precautions:

Water your horse frequently during the hot weather. This will overcome the danger of heavy drinking at infrequent intervals.

Feed regularly a ration uniform both as to kind and amount, to lessen the danger from colic and other stomach troubles. Clean the collar every time it is put on, and keep its bearing surface hard and smooth.

Sponge off the horse when he comes in from work, especially where the collar and other parts of the harness have left marks. Sponge out his mouth, nose, and eyes. Soak his feet thoroughly with cold water, but do not turn the hose on his body or legs. Wash his shoulders every night for a few weeks with cold salt water.

Allow him to stop in the shade for a few minutes whenever possible. Watch the horse for drooping ears, unsteadiness of gait, short, quick breathing, and a sudden ceasing to sweat. They mean that the horse is getting too hot, and that he must have shade, cooler air, and rest immediately.

If the horse suffers a heat stroke, protect him from the sun, remove the harness, apply cold water or ice to the head, wash out his mouth and nostrils, and sponge his entire body. Groom the work horse thoroughly. This will increase his health, vigor, and power.

Remember that the horse produces the greatest amount of net power when driving a load at a moderate gait, hence you get more out of him by increasing the load rather than the speed of the work horse.

Provide as cool a place as possible for the horse at night, or he will not be in condition to stand the heat and work next day.

Allow the horse to rest on Sunday. Do not use him for a buggy horse on Sunday.
DR. W. P. SHULER.

How to Increase Your Tomato Yields

THE use of commercial fertilizers will greatly increase your tomato yield is the recommendation of the horticultural department of the University of Missouri Agricultural College.

In recent experiments the department succeeded, through the use of commercial fertilizers, in growing five tons of tomatoes to the acre where only one to two tons had been grown before. The plants bore fruit earlier, and the heavy period of picking averaged about six weeks—three weeks longer than usual.

Stable and poultry manure was tried also, with good results, but the best and biggest yields were got from ground enriched with a complete fertilizer analyzing three to four per cent nitrogen and twelve per cent phosphorus. It was used at the rate of 200 pounds to the acre, drilled into the row a few days before the plants were set. Acid phosphate was also used successfully, and showed very striking results.

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\$44 Buys the New Butterfly Jr. No. 2 1/2

Light running, easy cleaning, close skimming, durable.

NEW BUTTERFLY Separators are

lifetime against defects in material and workmanship. Made also in four larger sizes up to No. 8 shown here; sold on

30 DAYS' FREE TRIAL

and on a plan whereby they earn their own cost and more by what they save. Postal brings Free Catalog Folder. Buy from the manufacturer and save money.

ALSAUGH-DOVER CO., 2189 Marshall Bl., Chicago

One Man Saws 25 Cords a Day

At Cost of Only 1 1/2c a Cord



GEO. E. LONG
President

4 Cycle Engine; Automatic Governor; Oscillating Magneto; Hopper Cooled.

Cash or Easy Payments

You have your choice of Cash or Easy Payments. Let the OTTAWA pay for itself while you use it.

OTTAWA LOG SAW

Saws Down Trees—Saws Up Logs By Power.

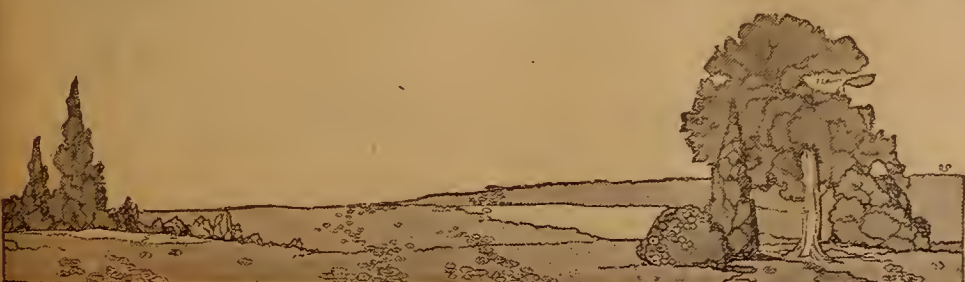
Dependable friction clutch on saw drive. Saves more time in doing the work than any other power drag-saw. Built to do hardest work and give lasting satisfaction. Nothing complicated. Engine starts without cranking.

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872 Wood Street,
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Strictly One Man Outfit



Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

HERE are two letters from two subscribers, each taking a mild whack at us. I print them because I think they answer each other. Personally, my sympathy is with the attitude of J. F. W., writer of the second letter—we are all made of the same dirt, whether we live in town or country, we make about an even number of mistakes, and a sensible, level-headed citizen is just that, no matter where you find him.

The time has come, in the interests of both town and country folks, for us to stop making faces at each other and get together to solve the mutual problem that we all face—the problem of three meals a day, a home, an education, plenty of congenial work, and a little cash provision against our old age.

Town and country interests are not different, in the last analysis—they are identical. The city man eats what the farmer produces; the farmer wears and uses what the city man manufactures. Their interests are irrevocably united. The only way we will ever get anywhere is by town and country folk trying to understand each other's problems so they can give each other a square deal.

Well, here are the letters:

"In a recent issue you printed a hackneyed poem that has been going the rounds since 'Heck was a pup.' The title, as everyone knows is, 'Why I Left the Farm.'

"Now, a great many people believe this story, and the town folks dote on it. Walk around any loafing joint in our cities and you will find that the reason farmer boys and girls leave home for the city is because they are underpaid and, as the anonymous poem states, 'their calf became his cow.'

"On the same page you had a most excellent article by T. C. Hart. Having had a similar experience, I know how he felt 'before and after.'

"There are several reasons why boys and girls leave the country for the towns. There may be one case out of a thousand where 'their calf becomes his cow.'

"Boys and girls leave the country for the same reason a boy in Pittsburgh goes to New York, or a girl in New York goes to Chicago. In such an instance again, the reason may be that Johnnie's promised bicycle became his sister's debutante gown. Or probably his father insisted that he work in the grocery, whereas his fancy settled around the baseball park.

"When the influx from the country to the city began, the influx of families and boys and girls from one city to another had long since been prevalent. Why wonder at one and not at the other? Is the reason not the same in both instances?

"Is it not, in general, a desire to better one's condition? And is it not to be commended rather than deprecated?

"'Keep the boys on the farm' is an old slogan, but is it a good one? Suppose he has the natural qualifications to be a lawyer, doctor, mechanic, or a financier; would he make a better farmer than the

FARM AND FIRESIDE
The National Farm Magazine
 George Martin, Editor

Trell W. Yocum, <i>Managing Editor</i>		Elizabeth Fitch, <i>Household Editor</i>
Andrew S. Wing, <i>Associate Editor</i>		T. J. Delohery, Chicago, <i>Associate Editor</i>

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H. H. Kildee, Iowa, <i>Livestock and Dairy</i>	Mrs. Nell B. Nichols, Kansas, <i>Household</i>	

You are invited to ask questions of any or all of these people in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

Farm and Fireside is published monthly by The Crowell Publishing Company at Springfield, Ohio

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Editorial and Executive Offices, 381 Fourth Avenue, New York
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lawyer whose real place is on the farm? It's the same principle of putting a square plug in a round hole.

"Please do not publish a poem of that kind again. Confine it in the waste basket or among the metal in the hell box. Let it shine in the comic supplement in the big dailies or the comic magazines.

"To publish it in a first-class farm magazine is an insult to the integrity, keen economy, and perseverance of that class of citizens that has made these United States what they are. Burdened with mortgages, selling their products at the price another set, which in many instances was less than the cost of production, paid taxes on land that could not be hidden, in spite of these barriers, by genuine economy they forged to the front, and gave their children to the towns, later to become Presidents, statesmen, jurists, and captains of industry." D. T. D., Ohio.

"We like FARM AND FIRESIDE for several reasons: It is optimistic and progressive; it is clean; it touches on folks, and this is especially interesting to a large family. We like its free service departments, and find good help from them.

"We object to it and most farm papers because of overstressing the virtues of farmers. Farmers are made of the same dirt as city folks, and are a mixture of good and evil even as we.

"I might go on *ad infinitum*, but I judge an editor has thought of these things too." J. F. W., Illinois.

Mr. Grant's Spuds

W. T. Grant of Linden and Malden, Massachusetts, was good enough to send us his picture with some of his fine potatoes and a letter about how he grew them. Says he:

"The article on potatoes, page 21 of your March issue, not how *much* you work, but *how* you work, interests me. I enclose snapshot of sample of Green Mountain potatoes I raised by that method. Now see if some of the large growers think it wise to take a little extra care in cultivating the spud.

"On a piece of ground 144x70 feet, I harvested 100 bushels of market potatoes and 8 bushels small ones. Do you call this a fair field? The ground was thoroughly made ready for the planting, no top-dressing except last year's. Treated seed before planting, and used in rows sheep fertilizer (200 pounds).

"When first showed above ground, plowed away from hill. Then cultivator through center, then plowed to hill and kept my cultivator going through as long (every week) as I could get through the rows, or until they were in full blossom.

"I know it pays to keep the ground loosened up thoroughly and often. The year before I raised on a smaller piece at the rate of 480 bushels to the acre.

"If this can be accomplished on small space, why not on large lots where they have power cultivators and all necessary appliances for the work?

"While pushing my hand cultivator, a passer-by asked me why I did not get a horse to pull it. I answered, 'What's the use when a jackass is pushing it?' But they turned out fine. No more decayed ones than in ordinary years. All clean as you can see by the cut. Did not go through them but once with hoe, then simply to even dirt up a little to plants. Kindly let me know what you think of the yield?"

Well, Mr. Grant, if you are a jackass, I say let us have plenty of jackasses all over the country just like you.

A. D. A. of Connecticut, wrought up by what he considers the stupidity of certain lawmakers, offers the following defense of pussy, which I submit herewith for whatever you may think it worth:

"Last year a bill was introduced into the Connecticut legislature to license cats, a great amount of talk having been heard of them destroying all our birds, etc.

"Very well, if you, Mr. Editor, were a cat, and were not half-fed, would you go hungry if you could catch a bird? Now, I have had cats to deal with since I was a boy—sixty years—all kinds, angoras, common stray cats, left to starve by seashore cottages. I live on the seashore, and I never have had them catch my little chickens and very few birds.

"Last fall I got out of cats, and I got one Phyllis—had a kitten. The fall birds were plenty, as I feed them fall and winter.

"Ground moles had been more plenty than usual all summer. They destroyed many feet of my beets and other garden growths.

"For over a month after I began to keep tally, she caught and brought to the house 270 moles besides some rats, house and field mice, and she kept this up even after the ground became frozen, and one bird!

"Now, how many birds would it take to destroy insects enough to equal what these moles did? Many lawns looked as though burned in spots. Mole traps gave no good results, and all this cry about cats killing birds is nonsense."

Well, never having been a cat, and only half-fed, I cannot say what I would do about the bird—probably catch it and eat it if I could—but I will say that 270 moles is some record for *any* cat. Really didn't know before that cats caught moles.

How It's Done

Here is a note from E. S. of Kansas, asking how the boundary line between the United States and Canada is marked.

The artificial marking of boundaries of a country the size of this would be a gigantic task, and fortunately it was not necessary all the way around.

Along the northwestern border, however, there is a vast distance where something of the sort was required, although it is doubtful if many persons have ever heard of it.

A glance at the map of the United States shows that its boundary adjoining Canada follows, the larger part of the distance, an irregular waterline formed by the Great Lakes and their outlets.

Thence from the Lake of the Woods, on the north of Minnesota, a more direct course is taken through the wilderness and over the mountains of the wild West to the Pacific Coast.

This boundary between the countries is marked at regular intervals by pillars of wood and iron, earth mounds, or stone cairns.

Beginning at the Lake of the Woods, cast-iron pillars have been placed alternately by the English and our Government, one mile apart, until reaching the Red Valley River.

Those set by our neighbors were brought from over the ocean, while ours were made in Detroit. They are a hollow casting of pyramidal form, eight feet in height, having a base eight inches square and an octagon flange one inch in thickness, with a top four inches square surmounted by a solid cap.

Into these hollow posts are fitted well-seasoned cedar joists, with spikes driven through apertures made for that purpose in the casting. One half of the length of the

pillars are firmly imbedded in the ground so that the inscriptions on their sides, in raised letters to inches high, face the north and south, the first reading, "Convention of London," the latter, "October 20, 1818."

Beyond the Red River, earth mound and stone cairns, seven feet by eight, generally denote the boundary line. When ever wooden posts are used, they are of the same height as the iron pillars and painted red above the ground.

Through forests a clearing has been made a rod wide, so that the course is plainly indicated. Where bodies of water are crossed, monuments of stone have been raised several feet above high tide.

Over the mountains, shafts of granite like grim sentinels, guard the way. Altogether, the fixing of the boundary mark was expensive; it was well done.

This fills the page for this month, and haven't said half the things I had to say. wonder if you get as much fun out of reading this stuff as I get out of writing it?

George Martin



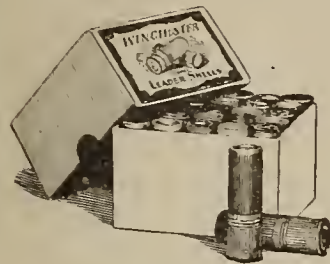
Photo from Charles Cox

One of the younger members of the Farm and Fireside family. He is Paul Ray of McLeansboro, Illinois, R. F. D. No. 3, showing his burro a good time between chores

WINCHESTER

1866

1920



Leader



Repeater



The Winchester Model 12
Hammerless Repeating Shotgun

HOW WINCHESTER GIVES YOU *PERFECT PATTERN*

OVER 400 different gauges adjusted to micrometer accuracy are used—and half as many searching inspections and tests made—in manufacturing your Winchester Shotgun, on which you depend for *half* of the work of producing the Winchester perfect shot pattern.

Every step in the manufacture and loading of each Winchester Shell requires equally careful attention.

The Winchester perfect shot pattern is achieved by working to the principle of *accuracy*. By holding materials to the strictest quality standards and keeping manufacturing tolerances minutely exact, in making *both* guns and shells. And above all, by making Winchester Shotguns and Shells *especially* for each other.

And then *making sure of the result* by still further tests.

When your ruffed grouse roars up out of the briars and speeds away among the pines, he will find no open space to get through in the Winchester shot pattern you shoot at him. Winchester testing and inspection have *made sure* that the shot pellets will be *evenly distributed without sacrifice of speed*.

The Winchester pattern shown above was made at 35 yards, using $1\frac{1}{8}$ ounces of *standard* No. 8 shot; circle 30 inches.

Use a Winchester Model 12 Hammerless Repeating Shotgun, 12, 16 or 20 gauge. Or if you prefer, a Model 97 with exposed hammer, 12 gauge.

And always buy Winchester Shells—Leader or Repeater smokeless, New Rival or Nublack in black powder. We make but one claim for them—the *service* they give you. *Of course they are completely waterproof*, correctly made, primed, loaded, wadded and crimped. Like all Winchester products, they are *balanced* in quality.

Buy your gun and shells from your local hardware or sporting goods dealer. And write to us any time you wish information.

For Short Ranges

Avoid mutilating your game unnecessarily. Winchester Brush Loads give you the same pattern at 25 yards with a gun of any bore, from cylinder to full choke, as a full choke gives you at 40 yards with the standard load. Without loss of velocity, penetration or uniformity; due to the superior Winchester patented shot spreader.



Why the DEALER Sells Firestones

8,096 *new dealers have joined forces with Firestone from November to June.*

Firestone's business increased 79% during the first six months of the fiscal year as against the same period last year—on the basis of giving biggest value to car owners. And the dealer knows that his business will increase as long as he sticks to this value-giving basis.

He recognized the big standard oversize cord as *value* when it was first announced last year. He was right. This tire is out-selling its last year's sales record five to one, an increase of 436% during the first six months.

The dealer recognizes in the Firestone 3½-inch tire a fixed standard of tire value for the majority market—the four

million light car owners who use this size of tire. He sees in this tire a business builder and a money maker in spite of the close margin of profit at which it is sold.

His store, his shelves, his fixtures, all represent investment. And here is the fast-moving staple—*value* established beyond argument—to reduce overhead and make his investment pay.

The tire dealer sees in the Firestone organization 17,000 men working *for* him and *with* him to help him hold his trade by putting more into tires for the money.

You are his trade. Most miles per dollar is what you want to buy and what your dealer wants to sell you.

Buy Firestones.

Firestone

3½

FARM & FIRESIDE

The National Farm Magazine

SEPTEMBER 1920

5¢ A COPY



ELEANOR
NEEDEN.

World Crops—And Your Farm—

See
page 5



**Barrett
Everlastic
Roofings**

The Best Roofing Investment—

THE only *economical* roof is one that *combines* low cost with long service.

You will always find *that* combination in Barrett Everlastic Roofings. And their economy is still further increased by quick, inexpensive laying and almost entire freedom from upkeep cost.

No matter what steep-roofed building you are planning to cover, one of the four styles of Everlastic is exactly suited to the job.

In roll roofing you have a choice of two styles—one plain-surfaced, the other handsomely coated with red or green crushed slate.

There are also two styles of Everlastic Shingles, one single and one in strips of four—both surfaced with crushed slate in artistic natural art shades of red or green.

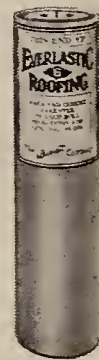
All four styles of Everlastic are fully described in our illustrated booklets, which we will send free on request. It will pay you to send for them.



The **Barrett** Company

New York	Chicago	Philadelphia	Boston
St. Louis	Cleveland	Cincinnati	Pittsburgh
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Everlastic "Rubber" Roofing

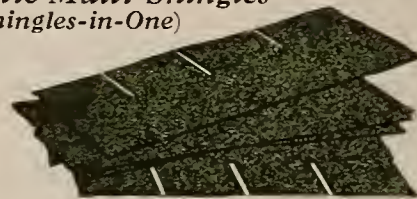
This is one of our most popular roofings. A recognized standard among "rubber" roofings. Famous for durability. Made of high-grade waterproofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions. Tough, pliable, durable and low in price. It is easy to lay, no skilled labor required. Nails and cement in each roll.

Everlastic Slate-Surfaced Roofing

A high-grade roll roofing, *surfaced with genuine crushed slate*, in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.



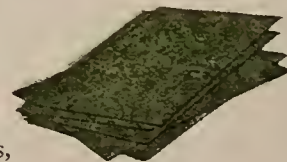
Everlastic Multi-Shingles (Four-Shingles-in-One)



Made of high-grade, thoroughly waterproofed felt and *surfaced with crushed slate* in beautiful natural slate colors, either red or green. Laid in strips of *four shingles in one* at far less cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Need no painting.

Everlastic Single Shingles

Made of the same durable slate-surfaced (red or green) material as the Multi-Shingles, but cut into individual shingles, 8 x 12 3/4 inches. Laid like wooden shingles but cost less per year of service. Need no painting.





Cornell Wood Board



Cornell is quickly applied right to the joists and studding or over damaged plaster by anyone who can drive a nail. Makes beautiful interiors in Homes and Tenant Houses

Have Your Lumberman Show You This Book of "Cornell Interiors"

THIS new collection of photo-colored views shows the variety and beauty of paneled interiors so easily obtained in any room by lining it with Cornell-Wood-Board instead of lath and plaster. Go see the actual results that you can produce at a very low cost. Cornell excels all other wall boards in three important respects:

1. Cornell's fashionable "Oatmeal Finish."
2. Cornell's "Mill-Primed" surface that takes perfectly paint without the cost and work of a sizing coat.
3. Cornell's "Triple Sizing" Process that gives triple protection against moisture, expansion and contraction.

For new construction, remodeling and repairing, there is nothing handier, more sanitary or warmer. Because the millions of feet that we are producing every week are not enough to supply the demand, we are building another great mill that will double our output. Place orders with lumbermen in advance to insure delivery when wanted.

CORNELL WOOD PRODUCTS CO.

Dept. C1. General Offices, Chicago
Water Power, Mills and Timber Lands in Wisconsin

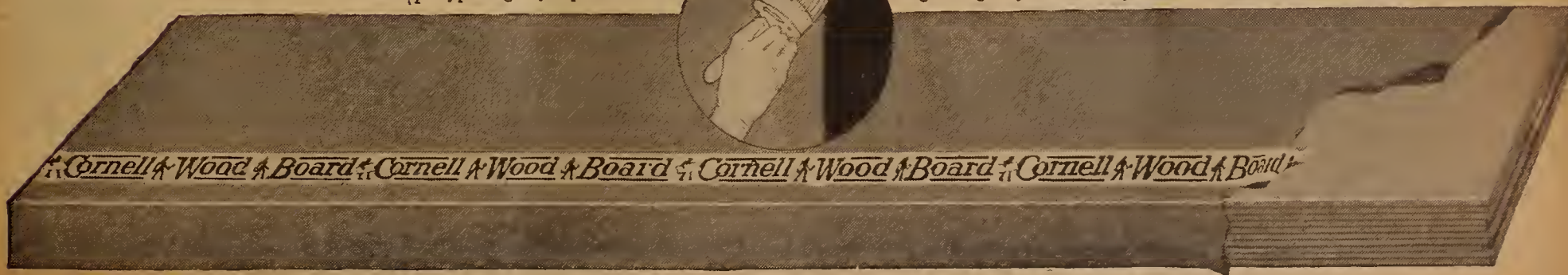


Line the Poultry House, Dairy House or Garage with Cornell-Wood-Board. Makes any building warm, dry and sanitary. Scores of other uses for Cornell Board—always keep a few bundles handy

Cornell comes wrapped in dust-proof packages of 10 panels each



Two widths, 32 and 48 inches; eight lengths from 6 to 16 feet



**NO
RUINOUS
VIBRATION**

Excessive vibration will
quickly ruin *anything*
mechanical. We

GUARANTEE

no ruinous vibration
in the Silent Alamo and
that it will operate efficiently
without being anchored to
a special foundation.

Silent ALAMO

FARM ELECTRIC POWER AND LIGHT

Read the whole
story inside

LIGHT and POWER
for the FARM

A Triumph Over Ruinous Vibration

In the Silent Alamo you have a machine of watch-like perfection. All that terrible shaking—that violent jarring and jolting which loosens bolts, breaks down adjustments, wears bearings unevenly, and quickly ruins any machinery, *is gone*. It requires no anchoring to a special foundation.

Read the Guarantee Tag

The whole story of this great achievement is told in the tag-booklet illustrated above, attached to each machine. It explains the ruinous effects of excessive vibration. Tells graphically how Silent Alamo engineers have finally overcome it. Explains why this remarkable plant will operate at 100% efficiency while mounted on three frail drinking glasses; why it needs no anchoring to a special foundation. It shows, too, why all this added efficiency means more power to operate your pressure water system, to run your churn, separator, washing

machine, sewing machine, electric iron, percolator, fan, etc. *More* current to illuminate your house and barns—at less cost for operating.

These are things you should know. They determine the value of your investment. Visit the local Silent Alamo dealer. Read this tag-booklet. See the Silent Alamo demonstrated. In the meantime—

Write for These Startling Facts—FREE

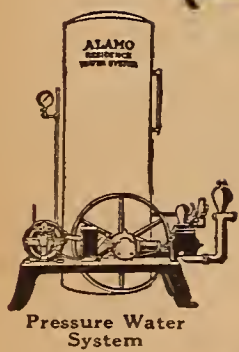
Write at once. We'll send you a copy of our booklet, "Electrify Your Farm." Contains the whole story. Now is the time to get the facts about lighting plants. Write today.

ALAMO FARM LIGHT CO., General Office, 735 Tower Building, CHICAGO
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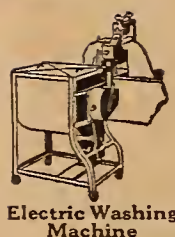
Silent ALAMO
REGISTERED IN U. S. PATENT OFFICE
FARM ELECTRIC POWER AND LIGHT PLANT

Electrical Accessories Any Silent Alamo dealer can take your order
for the electrical labor-savers you want

(74A)



Pressure Water
System



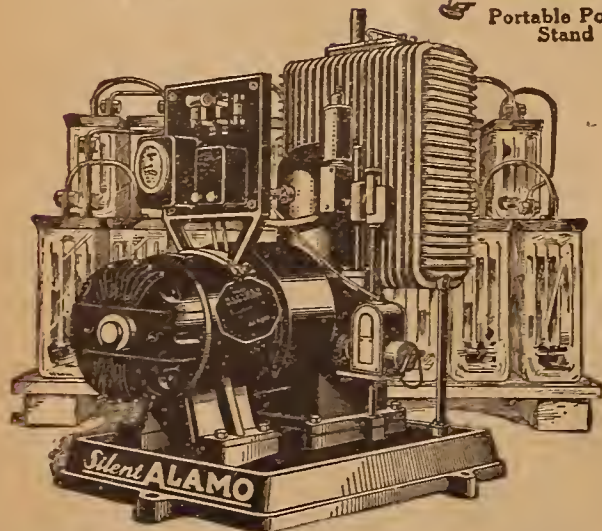
Electric Washing
Machine



Electric Iron



Portable Power
Stand



The quiet-running Red plant that needs no special foundation

World Crops—And Your Farm

By Signora Olivia Rossetti Agresti

Who was private secretary for twenty years to David Lubin

THE International Institute of Agriculture at Rome, Italy, is the partial realization of the life dream of the late David Lubin, an American.

In that institute sit agricultural representatives of fifty-seven nations, including the United States, working to stabilize world-market conditions for the crops you grow.

Lubin died, almost overnight, from influenza, in 1919, leaving incomplete the work of this international organization that he had built up.

However, if the leaders of the American Farm Bureau Federation, and other forward-looking men in American agriculture, realize, as Lubin did, that world wholesale prices, ocean rates, and conditions of production in foreign lands are the real controlling factors governing the prices American farmers shall receive for what they grow, then the A. F. B. F., and the American Government may interest themselves in taking up Lubin's work where he left off, and seeing that it is put on a sound basis.

Only we who were with him know how hard David Lubin worked to get the nations of the world to realize the need for an international economic observatory which would do for agriculture what national and international organizations had done for commerce, for finance, and for labor.

But remarkable as was the work by which this American citizen, little known in his own country and quite unknown in Europe, succeeded in gathering together in a permanent council the representatives of fifty-seven nations to elaborate a common policy for safeguarding the economic world interests of agriculture and promoting equitable relations between the producer of the staples and the consumer the world over, it is yet far from being, in its present restricted form, the full realization of David Lubin's dream. Rather, it must be considered as the first step in a vast constructive world policy toward agriculture.

LONG before the developments of the Great War drew the forcible attention of the Governments to the importance of ocean charter rates as a factor in determining the price of farm products, David Lubin had grasped their full significance. He saw that the great shipping companies of the leading countries had formed into rings which gave them a practical monopoly of international ocean carriage, and that while these rings gave fixed rates for the carriage of package (i. e., manufactured) goods, the rates for the carriage of the staples of agriculture, cereals, cotton, wool, etc., fluctuated, in the words of the Secretary of the New York Chamber of Commerce, "from day to day and from hour to hour."

He saw that this enabled powerful shipping companies to control, through fluctuating charter rates, not only the export but also the home price of the staples in the great producing countries, thus practically placing the economic status of such countries as the United States, Russia, Argentine, Canada, and so forth—exporters of the staples—at their mercy; that, by differential tariffs and preferential treatment, these shipping interests could make or unmake the prosperity of ports and countries, and he realized that this placed in the hands of private and irresponsible companies a dangerous power, a power which they should not have.

These considerations led him to believe that ocean carriage of the staples, as

affecting directly and indirectly interests far transcending those which can be legitimately left to private control, should be considered as a "public utility," and as such should be subject to international regulation. He proposed that this control should be exercised through an international commerce commission, which should be for the world what the Interstate Commerce Commission is for the United States.

It was in the early summer of 1914 that David Lubin went to

Indeed, it is one of the paradoxes of the war that it has demonstrated more clearly than peace ever did how close are the bonds of solidarity which bind the nations together, particularly agriculturally.

At the very time when patriotic passion had inflamed nationalism to white heat, the nations were forced by the imperative needs of self-preservation to develop international organization and control in the economic field to an unprecedented and undreamed of extent. The Wheat Executive made the cereal purchases for the Allies on an international basis, the Maritime

He realized the importance of the American farmer. And as things stand, with the granaries of Europe—Russia, Hungary, Rumania—devastated, the world has to rely first and foremost for its food supplies on the American farmer.

But if the farmer is to do his best he must have his task facilitated by easy credit—not only long-time land credit as provided by the federal land banks, but also commercial credit in the form of open accounts with commercial banks, wherewith to finance his current business expenditure. With this end in view Mr. Lubin devised a system by which the machinery of the existing federal land banks for valuing farm lands and insuring the validity of titles could be used for the purpose of delivering, at a minimum charge, to any farmer residing within a land-bank district, a certificate showing that he owned so much land, valued at such and such a price, and was good for a line of credit representing 20 per cent of the capital value of said land.

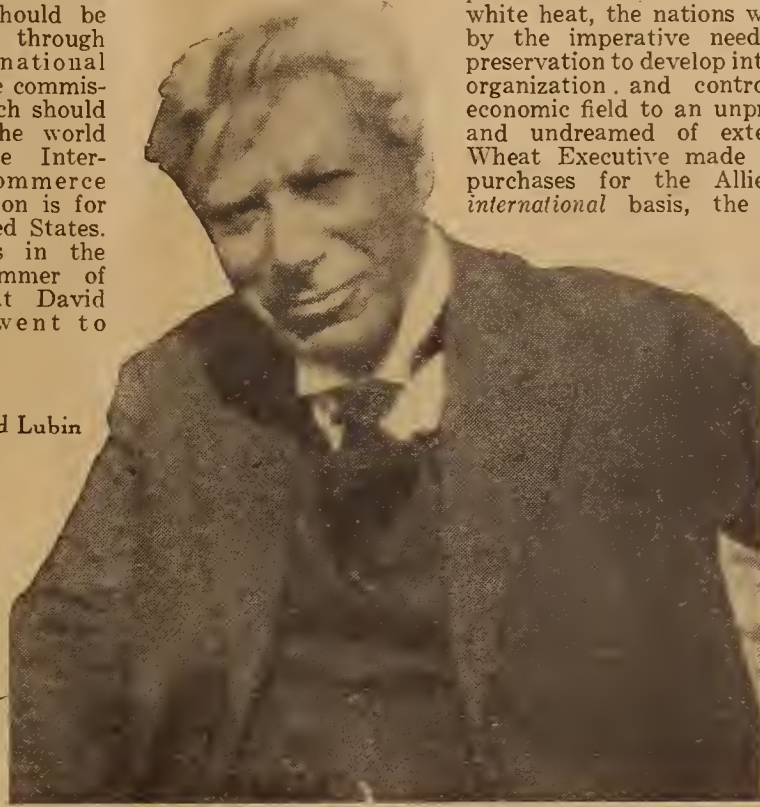
This certificate would then be endorsed by the land bank, which would acquire thereby a first lien on the farm, and stand security for the lien of credit allowed. By depositing the certificate thus endorsed with a commercial bank as security, the farmer would then be able to obtain commercial credit by opening an account up to the limit vouched for, the commercial bank being guaranteed by the land bank, and the land bank insured against all risk by the lien on the land.

MR. LUBIN submitted this proposal to eminent economists and financiers in Europe and the United States. It stood the acid test of criticism. He then called it to the attention of members of the House and Senate in the hope that it could be passed as a war measure for increasing production. But the multifarious and urgent business then before Congress made this impossible. The need for such a measure is, however, as great now as ever, and the farmers of America should not allow this proposal to go by default.

Lubin's constructive mind was always keenly alive to the fact that production is only a segment of the economic circle. It is all very well to tell the farmer to produce more, to grow two ears of corn or raise two head of cattle where one used to be, but unless due care is taken at the same time to provide the machinery for equitable distribution, what should be a blessing will become a curse.

This problem of equitable distribution inspired his life-work, for he saw in it a fundamental question of justice, of righteousness in the relations of man to man. The ideal symbol of liberty, he used to say, is the flag, but the practical symbol is the dollar, and whoever, by inequity in distribution, deprives the producer or consumer of his rightful share in the dollar deprives him of his liberty and commits a sin against democracy.

Toward the solution of this problem in the international field he conceived and realized the International Institute of Agriculture, with its world crop-reporting service supplying a basis for equitable price formation for the staples; in the national field he worked hard for the creation in America of a system of township, county, state, and national chambers of agriculture, by means of which the farmer would be kept in continuous, direct contact with the needs of the local, national and international markets. [That, thank goodness, is exactly what the American Farm Bureau [CONTINUED ON PAGE 24]



David Lubin

What a Polish Jew Immigrant Did for the American Farmer

DAVID LUBIN came to America from Poland in 1849. He drifted to California as a youth, opened a shop in Sacramento, and sold overalls to the miners. One day a husky Irishman dubbed him "the honest Jew," and ordered every man in his gang to buy two pairs of overalls.

Lubin built up one of the largest mercantile establishments in the West, acquired a fortune, and then turned his attention to public matters, particularly those which meant better conditions for the farmer, whom he recognized as the rock on which America's prosperity is built.

In 1894 he organized the California Fruit Growers' and Shippers' Association at Sacramento, and the principles he incorporated in that organization have had not a little to do with the success of the California Fruit Growers' Exchange in branding, packing, shipping, and marketing their product as a group rather than as individuals.

Lubin was undoubtedly one of the great pioneers of American agricultural coöperation. It also was Lubin who conceived and founded the International Institute of Agriculture, which may develop into the long-needed, long-looked-for world agricultural organization. This article will tell you more about that.

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Washington to place this matter before the people of the United States, and with the assistance of Duncan U. Fletcher in the Senate, of Congressmen Kahn, Goodwin, and many others in the House, and with the support of state-granges, farmers' associations, and the Southern Commercial Congress, he succeeded in getting the whole problem widely discussed, and a joint resolution passed by the House and Senate instructing the International Institute of Agriculture to take the initiative in bringing the proposal officially to the attention of the several Governments.

The Great War came, and interrupted this work, but not the activities of the Institute of Agriculture, nor of Mr. Lubin.

Transport Council controlled and regulated ocean carriage, the whole question of exchange rates, credits, and financing had to be handled on an international scale, and hardly was the armistice declared than the Supreme Economic Council, on which America, Great Britain, France, Italy, and Japan sit with the representatives of the minor powers, had to take over the whole gamut of economic interests as affecting not only the allied but also the neutral and enemy countries.

Lubin saw this trend clearly, and the last months of his well-spent life were devoted with almost feverish energy to working out proposals to facilitate the transition from war to peace.

Do You Pay Your Man for His Time, or for the Work He Does?

By H. Z. Francis

DESPITE our improved machinery, there are some operations on nearly every farm which are still done entirely by hand, and which will be done for years to come. Are you doing those hand operations as cheaply and quickly as you can?

Think of the work required to shock your wheat and oats and barley every summer, of the men who spend a month every fall husking corn, the time spent in picking and sorting and packing your apples, peaches, and oranges! Cutting corn by hand, picking up potatoes, handwork on cotton, tobacco, and sugar beets each take many, many days of labor each year. No satisfactory machines have ever been invented for some of these jobs.

As a rule, I find there is more time and energy wasted on handwork, whether done by the farmer or the hired man, than there is on work done by implements and machinery. At least, many of us could save some of our own time and money by planning such work more carefully and sticking to the plan.

The fact that corn-husking is usually paid for by the bushel is largely responsible for this being one of the most efficient hand operations in the entire country. I venture to say that on the whole less time is lost and energy wasted in husking corn from the standing stalks than in any other hand operation on the farm. The men put in full days, keep busy all the time, and do not often stop even to talk to each other.

Furnishing each man with a team and wagon, so that he works by himself, also helps to get more corn in the crib. On any job, there is nearly always a certain amount of loss when two or more men work together. They get in each other's way, the fast workers have to wait for or help out the slower ones, and there is often a general lack of coördination all around.

It is a mistake to think that *efficient* work always means *hard* work. Of course, if one expects to do a full day's work he cannot rest too often or too long, but in the actual doing of the work the best way is really the easiest way, provided the quality of the work is kept up to standard. The great trouble in inducing hired help to use efficient methods is that they often do not realize this fact. If you ask a man to use a method which will increase his output in any way, even though it is not accompanied by any increased expenditure of energy, he generally thinks you are trying to make him work harder.

If you hire a man by the day or hour, and he knows that he will be discharged as soon as the job is finished, the only way by which he can gain anything is by making the work last as long as possible. Then, too, it is hard for a hired man to see why he should try to do a full day's work, provided he stays in the field all day.

SUCH troubles with hired help are done away with when pay is placed on a piece-work basis. My observations have been that work paid for by the piece is nearly always more efficient and economically done than that paid for on a time basis.

When pay depends on the amount of work actually done, the hired man has an incentive to do as much as he can, and you are relieved of the necessity of closely supervising his work. It enables good workers to draw better pay, and automatically weeds out the lazy, slow-moving ones, or at least materially reduces their wages. The only possible objection from the farmer's standpoint to this method of payment is that the worker in his desire to accomplish the maximum may not do as high-class work as he otherwise would. But which is the greater evil?

Why can't all handwork be done as efficiently as corn-husking? In cutting down corn by hand, a great deal of labor could be saved, and more ground covered in a day, if everyone would adopt a definite method of procedure in cutting and building a shock. If you are not sure that you have learned by past experience just what will be the best method under the conditions, you can afford to try several different methods—keeping account of such things as the time required and the number of

steps taken for each shock—before deciding just what system to use. The system which you finally adopt may not be absolutely the best one, but it will certainly be better than the haphazard way.

The work of a young Pennsylvania farmer I visited while he was cutting corn last fall offers a good example of the way in which a seemingly unimportant detail may cut down a man's output. He was following a fairly definite system in cutting and building the shocks, but evidently had

the bundles on the ground, and decides before he starts the shock just where he will build it to cut down the amount of carrying, how many bundles he will put in it, how many caps he will use, and who has a fixed order for starting and building the shock, will accomplish considerably more with the same effort than the man who gives these matters no thought.

Last summer I was in a 50-acre oat field, in Central Illinois, where two binders had cut nearly the whole of the field before the

were three men shocking oats, all-day hands receiving the same wages, but there were no great differences in age or physical ability. However, one of them set up nearly as much grain as the other two together, and the quality of his work was noticeably better.

The two inefficient ones worked as a pair, but made no attempt to get in any teamwork. The size of their shocks varied from 8 to 16 bundles, they generally used both hands to pick up a bundle—it can be done with less effort and time with one hand—and they never tried to carry more than one at a time. As nearly as I could judge, the other man did not use up any more energy during the day than each of these, but he did not do anywhere near as much unnecessary walking and carrying, nor use anything like as much effort in picking up the bundles and placing them in the shocks.

Some men just naturally seem to get more done than others, but if you will watch their work carefully for a little while you can always find the reason for it. Are you sure that you do not lose a lot of time just because you do not size up your own work or that of your help as carefully as you might? Handwork in the field, the daily chores, and all the odd jobs on the farm still take a surprisingly large amount of time. And time means money—more money now than it ever did before.

WHEN work is done by machine it takes just about as long to do it poorly as it does to make a first-class job of it. If you have a good corn planter or grain drill, and handle it right, you should do a good job of planting. If you have a poor machine, and do not adjust it and handle it properly, you will likely do a poor job. But in either case you will cover about the same amount of ground in a day.

In nearly all handwork, however, after a certain point is reached, added quality can only be secured at a considerable sacrifice in quantity, and it may pay to figure a little on how well a piece of work should be done.

If you are doing it yourself, have plenty of time, and are not neglecting other gainful work, you can afford to do work of extra high quality, while if you were hiring the work done the reduction in amount resulting from doing it better might more than offset any possible gain.

Take shocking wheat or oats as an example: The man with only a few acres who can use some unpaid family labor, or can exchange labor with a neighbor without any outlay of cash, can afford to take more pains and spend considerably more time per acre than can the farmer with a large acreage who has to run two or three binders to get his crop harvested before it gets too ripe to handle, and who has to pay a good price for all the labor used in shocking.

The first man can have enough help in the field to follow close behind the binder, pick up the bundles almost as soon as they are dropped, and set them up in solidly built shocks, with two well-broken, precisely placed cap sheaves on each, so that, even the worst wind and rain storms can do little or no damage—all for the possible saving of a few dollars on the entire crop. The man with the large acreage and the expensive help can only afford to make his grain safe from the ordinary weather. He will expect each man to set up twice as many sheaves in a day as the small farmer does.

However, to do this the men cannot follow around the field after the binder and have all the grain set up within an hour of the time it is cut. They must work down the bundle rows at a considerable distance behind the binder, and some of the grain must lie on the ground for a day or so after it is cut.

Even then the shockers cannot spend so much time with each shock, but must be content with building them so they will withstand the ordinary weather between cutting and stacking or threshing. Of course, in some years the damage done by the weather to a crop handled in this manner may amount to more than the 50 per cent saving in the cost of shocking, but not often the same principle holds true for nearly all handwork on the farm.

Arthur Gwin—Boy Champion Pig Grower of Missouri



Arthur Gwin

LITTLE did Arthur Gwin, of Livingston County, Missouri, think that he would be a state champion inside of a year, when in January, 1919, he paid \$50 for a purebred Spotted Poland-China gilt and joined the boys' and girls' pig club of his county. Little did he think—though he may have hoped—that, through his pig, he would win statewide recognition and make more than \$600.

In April his sow farrowed, giving him four gilts and three males, one of which died when it was three weeks old. About four months later he entered his best boar in the Missouri State Fair, at Sedalia, where it won first place in the Spotted Polands and third in the sweepstakes. At the North Missouri Farm Congress this same pig took first honors, and two of his sows took first and second, and first in pen, both in the open and pig-club classes.

Gwin had been feeding shorts, tankage, and corn since his pigs were weaned, and continued the same feed until he sold them in November in the pig-club sale at Chillicothe, Missouri. There they took first and second prizes in male; first, second, and third in female; and third in pen for being in the best show condition. When sold, the sow and six pigs brought \$495, with \$43.50 in prize-money, making \$538.50 the total receipts. The total expense of raising them was \$220, making a net profit of \$317.95.

At the end of the season he and all other youthful contestants in the State sent complete records of their year's work to the state university to be judged. One boy from each county in northern Missouri was given a free

trip to Columbia by the St. Joseph Stockyards Company to attend Farmers' Week. Arthur Gwin was among them. It was during this week that the state club record winners were announced, and Gwin was named grand champion of the State. A \$100 prize pig was given him, which, including his trip, brought his year's receipts to over \$600.

Not only is Gwin a grand champion, but he has also proved to be a good judge of livestock. During the same year he was a member of the stock-judging team from the Livingston County Pig Club and the vocational agricultural class of the Chillicothe High School, which won first place in stock-judging at the Interstate Livestock Show, at Sioux City, Iowa, and represented Missouri at the International at Chicago. He also won first place at the North Missouri Fair held at Hamilton, and first in judging corn and dairy cattle at Columbia during Farmers' Week.

At present young Gwin is working to duplicate his accomplishments of last year as a member of the same club, but next year he is planning to take second-year work in vocational agriculture.

J. A. WISDOM.

given no thought to tying them. The wind was rather high, and he had to tie each shock as soon as it was cut.

The twine was in a badly tangled bunch, which was always dropped on the ground somewhere near the last finished shock. When ready to tie the next shock the worker had to walk back and search among the stubble and weeds for this little bunch of twine, and then untangle a string. My watch showed that this generally took nearly a minute. He was cutting from 75 to 100 shocks per day, so he lost at least an hour's time and walked a half or three fourths of a mile each day, just because he had never stopped to think about the details of this little operation.

When shocking wheat or oats it may be harder to follow a definite system than when cutting corn. The binder must be doing exceptionally good work, and the binder operator must pay very close attention to dropping the bundles if the work on every shock is to be exactly the same. But the shocker who sizes up his work, looks at

shockers started to work. There were three men shocking, and each of them was going down a bundle row by himself. There were 15 or 20 shocks to each bundle row, and I could see no difference in the amount of work required on the different rows. However, one of the men always finished his row first, and helped the others set up their last three or four shocks.

This man was nearly 70 years old, had stooped shoulders, and a shuffling walk, and it did not seem possible that he was exerting more energy than the others, who were considerably younger and apparently more able. A half-hour spent with each one showed me that the old man was actually making fewer motions, and that each individual motion was slower than those of either of the others. He was using his head in an effort to conserve his muscular energy, and as a result he accomplished 20 to 30 per cent more than his fellow workers.

That same day I found on a neighboring farm an even more striking example of differences in efficiency. On this farm, also,

How I Make Purebred Horses Pay Their Way in Everyday Farming

By Dean C. F. Curtiss

Of the Agricultural College at Ames, Iowa, in an interview

I STARTED a good business when I stocked Rookwood Farm with purebred Percheron horses twelve years ago. Since then these horses have provided the motive power to farm the land, and have returned me nearly \$9,000 in the way of cash dividends through the sale of surplus colts. And I now have as many horses as when I started, but they are better bred stock.

What I have done can be duplicated by any farmer who can give horses a reasonable amount of care, and knows how to grow and handle colts.

Horses were not worth as much then as they are now, and I didn't have much money after buying the farm; but I figured that a comparatively large outlay at that time would buy purebred horses which would not only provide economical motive power, but at the same time give me colts that would sell readily at good prices.

I bought four mares, two imported weanling fillies, and a pair of medium-weight geldings, the total outlay costing me \$2,185. Two and one-half years later I disposed of two of the less desirable mares, and replaced them with younger stock raised on the farm, and without additional cash outlay.

The present stock of horses consists of six head of brood mares, two geldings, and two colts. These horses are better than the stuff I started with, for I have made it a rule to breed the mares to the best stallions available. It is the policy of Rookwood Farm to maintain just enough brood mares, in addition to a pair of geldings, to do the farm work. No attempt has been made to establish a breeding farm for horses.

While our horses are more valuable than those on the average farm, they are not pampered, as some people think is necessary when purebred stock of any kind is kept. My horses are big draft mares, capable of doing regular farm work in all seasons, at the same time producing colts which bring good money.

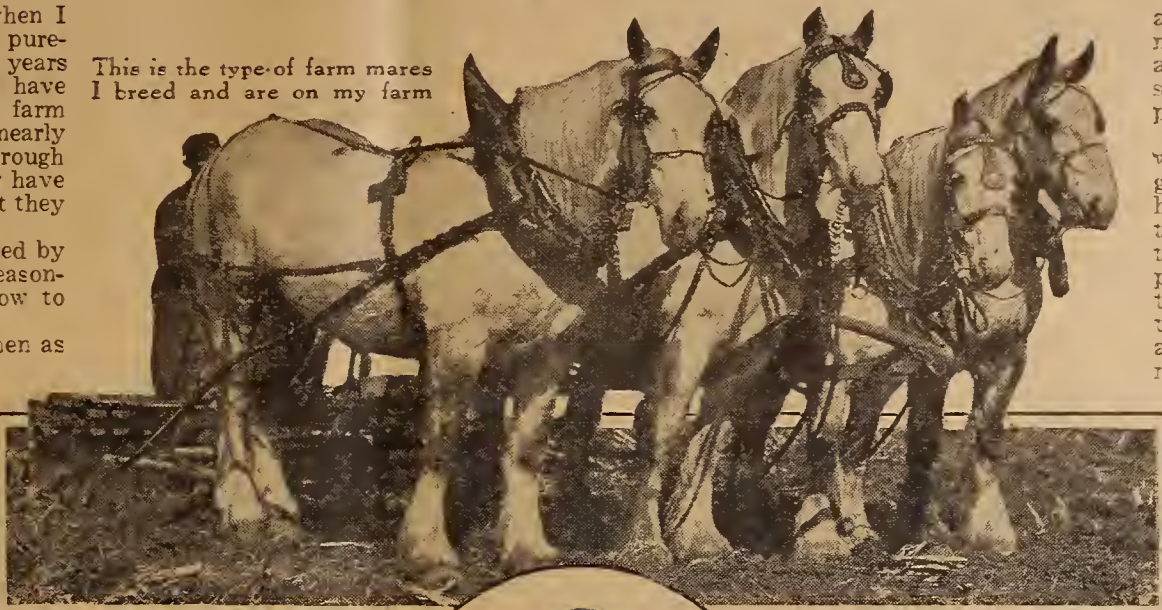
I USE my horses every day during the busy season, and in the winter I turn them into the stalk fields and sheltered timber pasture. They have open sheds to protect them during storms of extreme cold weather. For the most part they get their living during the winter months from the waste feed in the fields; but when it is stormy, and feed is short, I give them a little corn fodder and hay. This is necessary to keep them in condition. There is enough feed available on most every farm to take care of a few head of horses, without giving them grain. This sort of treatment does not in any way indicate that my horses are pampered, or handled any different than on the average farm.

All of the surplus stock is disposed of when colts, and always under two years of age. Four of the colts I sold were under one year. Two mares died during the twelve years, and one colt was crippled and of little value.

I have proved to my own satisfaction that it pays to use the best sires available. It is cheaper in the long run, for the colts you get are worth more money. It is a coincidence that I proved this fact on my own farm. I did not do it intentionally, but it came about that way.

Two colts were sold at one year of age in succeeding years. They were out of the same mare, both sired by imported stallions, but one sire was very superior to the other. The colts were equally well grown, and in good condition at the time of the sale. Yet one of them brought only \$350, and the other sold for \$1,000. I figured I might have added \$650 to the cash return from the sale of these two colts, had the better of the two sires been available for

This is the type of farm mares I breed and are on my farm



IN ADDITION to being dean of the College of Agriculture of the Iowa State College, Charles F. Curtiss is owner of Rookwood Farm at Ames, Iowa. He has it stocked with purebred Shorthorn cattle and Berkshire hogs, and has made considerable progress in both cattle and hogs. He is internationally famous as a judge of horses, and was president of the 1919 International.

Dean Curtiss, while at college most of the time, keeps a close check on his farm. He makes a practice of arising early every morning, going out to the farm and looking things over, and then getting back



Dean Charles F. Curtiss

to his office by the time classes begin. He takes a lot of pride in his livestock; and, even though his Percheron horses are used primarily for farm work, he handles the colts as well as any of the big breeders whose livelihood depends solely upon their business.

In regard to the horse prices, Dean Curtiss says in this article: "I believe we will see prices which will be higher than ever, because we are facing a real scarcity of horses. Farmers quit breeding a few years ago, when prices dropped, so that now we are in need of horses for city and country work."

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as the smaller horses. I find that the medium-weight mare, with quality and conformation, plenty of bone and substance, is more likely to be a better producer than the extra large dam.

And by breeding these medium-weight mares to big draft stallions, good heavy colts can be obtained. I have been breeding my mares to Jalap, the big Percheron stallion owned by the Iowa State College. He has few peers in the breed, and weighs better than a ton. He has given me colts that sell well, one of them, Jeanette, a two-year-old filly, going for \$3,000 recently. She was purchased by George M. Oyster of Walkersville, Maryland. This filly stood second in her class at the last International.

She is an outstanding animal, being slightly upstanding, with keen alertness about her carriage and manner. She has an exceptionally fine set of feet and legs, with plenty of quality. She is large for her age, weighing 1,600 pounds at eighteen months, and has never been overfitted.

IT HAS been my experience that the care and development of colts count a lot in their making. Colts should be grown well, especially during the first year. While breeding counts, the way they are grown out has a lot to do with their value.

Liberal feeding and plenty of exercise are two factors which play an important part in the growth and development of a colt; and the selling price, in a large measure, depends upon these two things. I have found oats, bran, alfalfa-molasses feed, and a limited quantity of hay to be the best feed for growing colts. The alfalfa-molasses feed should be supplemented by clover, alfalfa, or timothy hay.

The first winter after weaning is an important time in a colt's life. He should be well housed, fed and exercised during this period, lest he get a setback. After the first winter, if given proper care and feed, the colt will come right along.

In the spring, when grass is ready, the colt should have the run of a good pasture, with plenty of good grass and water. Later on in the summer, when the weather gets hot and the grass begins to get rough and dries up, I have found it to good advantage to supplement the scant pasture with a little grain.

By doing this the colt will have enough feed, whereas if left solely on grass, and it is short, he will suffer. A setback at this time is likely to hurt the animal. Moreover, a little grain every day, even though the grass is good, makes for good bone and substance.

Watch the colt's feet. I find it well to trim the hoofs occasionally, thus keeping them from growing too large and from cracking. Often a misshapen hoof can be partially or wholly corrected by keeping the hoofs in good shape during the first two or three years.

If hoofs are allowed to grow too long, they will crack easily, and sometimes do not heal well. And long hoofs, which eventually turn up, do not keep the colt standing squarely on his feet.

Among the mares I bought at the outset was a pair of high-class animals, one being by Calypso, and the other by Introuvable, two of the noted Percheron sires at the time. These mares, and the imported fillies I bought, proved to be the real foundation of the horses I now have.

These four mares gave me colts which were easy selling when I had a surplus, because I always aimed to breed them to the right kind of stallions.

In a nutshell, I have purebred horses on my farm for the same reason that any average farmer should have purebreds on his farm—that is, they pay.

my use both times. Best sires are cheaper.

The time for farmers to get purebred horses for their farm work was never better than at present. In general, good horses are scarce, and farmers have commenced to resume breeding. If they would use purebred mares instead of grades, when they have to buy breeding stock, I am sure they would find it more profitable in the long run. Of course, purebred mares would cost more than grade animals, but the return from the sale of colts would bear the same proportion between the cost of the breeding stock. And it costs no more to keep a purebred mare.

I believe we will see prices which will be higher than ever, because we are facing a real scarcity of horses. Farmers quit breeding a few years ago, when prices dropped, so that now we are in need of horses for city and country work. The teaming men in the big cities who, influenced by the success of the motor truck to do some work, discarded practically all of their horses, have now found that the horse could do some work more economically than the truck.

And farmers are finding that the tractor will not do away with the horse on the farm. Each has its place, and when used to supplement the other the best work is done.

My advice is to buy good heavy brood mares, of the breed best liked, and then breed the

mares to the best stallions available. If a good sire cannot be found in the neighborhood, it might be advisable to ship the mares away to a place where a suitable stallion can be found. However, if several farmers in a community will go to raising purebred horses on a small scale, they can club together and buy a good stallion.

I find that there is an increased demand among farmers for good purebred mares. They want heavier teams which can be bred and produce colts that will find a ready sale at good prices, in addition to doing the heaviest kind of farm work.

Farmers have found that light-weight work horses are not as useful as the draft animals. The heavier horses can do the hardest kind of work, and at the same time produce good colts. And the trend of the market is for the draft animal. They sell readily, at the best money; whereas the light horses are hard to get rid of at a price which will permit the producer to make a little money.

It is hard to get mares which are too big if they have quality. The bigger they are the more readily they sell, and the more work they will perform; but I have found it advisable not to sacrifice quality for size. Mares weighing from 1,600 to 1,800 pounds, having good draft conformation, large feet and good bone, are, in my opinion, the best buy.

On the other hand, the largest brood mares are not necessarily the most desirable, because some of them do not produce as well



This is Jeanette, the filly I sold for \$3,000

Winter Eggs—Why Some Folks Get Them and Why Others Do Not

By Victor G. Aubry

ANYBODY can get eggs in spring and early summer. As Uncle Wid says, "Anything with feathers will lay in the spring, even a feather duster." But fall and winter is another thing. The poultry keeper who goes out and gathers them at this time of the year is the fellow that doesn't have to worry about the "high price of feed."

One has only to use his "horse sense" to see the reason for this. It is natural for a hen to lay in the spring and summer. It is unnatural for them to lay in the fall and winter.

First, and fundamental, we must not forget that in the fall and winter we can expect our eggs from pullets only—that is, birds which have been hatched in the spring of the same year, some time between January and July. These birds should mature in about six months' time and start laying.

The older birds take the fall and winter for a natural resting period, which they must have in order to lay another year and to make breeders. It is wrong to expect these birds to lay profitably after the middle of October and before the middle to the last of January, which is the season of our highest egg prices and the time when we should expect a lot from our pullets. Of course, we occasionally see flocks of old birds doing fairly well during this period, but it is hard on them, and almost invariably the poultrymen will suffer a setback in the end.

While on this subject, it might be well to say that it is just as impracticable to expect to make as good breeders out of pullets as out of hens. This will be discussed further in a future article.

What are the factors of poultry management which have made possible the production of fall and winter eggs? They can all be grouped under two main heads: 1. Breeding. 2. Feeding.

These are two very big factors, and they cannot be separated. Either one alone will not suffice. The best-bred pullet improperly fed will loaf all winter, and of course the best kind of feed will not make the poor-bred bird lay. The saying goes, "You can't get blood out of a turnip."

Breeding poultry for winter eggs is principally a matter of breeding them for early maturity, or breeding birds which will mature and lay in six months instead of ten or twelve months, as is natural; also breeding birds which have the power of functioning these reproductive organs for a long period instead of for just a short time in the spring or breeding season.

THIS factor of breeding has long been established in most of our present-day strains of poultry, especially in the light breeds (Leghorns, Anconas, etc.), and our general-purpose breeds (Plymouth Rocks, Wyandottes, etc.). Of course, these are still being improved each year by breeding, but the main has been established so that for the general run of poultry keepers it comes down to a point of feeding.

Feeding for winter eggs starts back a long way before we actually go out and gather them. It starts from the time the pullet has developed from a chick to a squab weighing about one half to three quarters of a pound. This feeding will be treated later in this article. It is enough to say here that this bird must get, during the summer or growing season, a good, strong frame upon which the poultryman is able to put some meat and fat for reserve in the winter, and inside of which frame she must have enough room to manufacture eggs easily and in large numbers.

Assuming that we have this frame on our pullets, the first thing we must be sure

of is a reserve of flesh and fat. Until about a month before the average pullet matures or starts to lay she is using most of the feed she consumes for growth, and she is apt to be a little shy of flesh.

If she has egg production bred in her and you start feeding her at this age or point with a ration high in protein, especially animal protein, such as meat scrap, fish meal, etc., she will begin to lay. She immediately begins, then, to draw on

high fiber and protein content which they have been growing and developing on, and given a more fattening feed as follows:

PARTS BY WEIGHT

Bran.....	100 lbs.
Wheat middlings.....	200 lbs.
Cornmeal.....	200 lbs.
Oilmeal.....	50 lbs.
Ground oats (heavy).....	100 lbs.
Meat scrap (high grade).....	100 lbs.

It's All in the Way You Go About It

HERE are two pullets ready to lay for the fall and winter. Both are from the same hatch, reared alike and grown by the same man.

Bird No. 1 did not start laying until she was ready. She was in fine flesh, with plenty of reserve for winter eggs. She laid heavily during the winter, and finished the year with 247 eggs.

Bird No. 2 started to lay before she was ready. She was poor in flesh, and this picture shows her off production during the winter. She was very unsteady all winter, and only laid 98 eggs for the year. She never had a chance, and was always behind in flesh and condition.

No. 2 perhaps would not have laid 247 eggs as did No. 1, but she would have laid a great many more than she did had she been in condition on the start. A month or

six weeks of fattening feed just before laying would have done it.—THE EDITOR.

what little surplus or reserve flesh and fat she has, and consequently uses this up in a hurry, especially if she is a heavy layer and the bad weather of fall and winter has started to enter into the problem.

Just as soon as this surplus is used, then she must rely entirely on her daily ration to manufacture into eggs. It is a case of "from hand to mouth, and no reserve." At the least little adverse condition that comes in she must necessarily quit. Then on comes the resulting molt, and good-by egg production for a month or six weeks, maybe two months; whereas this same pullet, had she been fattened up for three weeks or a month before laying, would have had the reserve to hold up under these rainy days, and would have laid steadily all winter.

The first step here is that of preparing the pullet for her winter's task, and not of pushing her into it by heavy protein rations before she is prepared for it. This applies to the late-hatched birds as well as to the early-hatched flock.

At this point I do not want to be misunderstood. I don't mean necessarily the holding back from laying of a flock of pullets—not for the world—but I mean that they must be ready before they start. I have some very good friends who were once in the habit of practising a starvation method on their early-hatched pullets so they would not start laying too early and molt.

This starvation, as I call it, was to increase the amount of fiber-carrying feeds in the ration, such as bran, ground oats, and alfalfa meal; also to cut into the amount of meat scrap. This was then followed by a heavy feed when one was ready to have them lay. These practices were directly opposed to common sense, and invariably resulted in a very unsteady winter lay. In the first place, these birds were starved of any little surplus or reserve they had, and then drawn right to work, you might say, on no reserve ammunition.

THE following rations and method of feeding will be found very efficient for fall and winter eggs. About a month before it is expected they should start laying, or just about the time they throw their growing molt, their ration should be changed. They should be taken from a ration of a

This feed should be fed dry, in self-feeders or hoppers, and left before them at all times.

SCRATCH FEED—PARTS BY WEIGHT

Corn.....	300 lbs.
Wheat.....	100 lbs.
Oats, barley, buckwheat, or kafir corn.....	100 lbs.

This may be varied in ingredients, provided corn makes up from 50 to 60 per cent of the weight.

The amount of this scratch feed should be increased until they are getting from 10 to 12 pounds per day per 100 birds. If they leave the oats or barley, cut down on these grains in the mixture.

Following this system of feeding will prevent the birds coming in to laying when they are too thin and have no reserve, and will round them up in good shape with a reserve for winter work. About a month of this feeding should condition them, and then they should be put on a laying ration, as follows:

MASH FEED

Wheat bran.....	100 lbs.
Wheat middlings.....	100 lbs.
Ground oats (heavy).....	100 lbs.
Cornmeal.....	100 lbs.
Meat scrap (high grade).....	100 lbs.

Feed dry, in self-feeders or hoppers left before the birds at all times, and easily accessible.

SCRATCH FEED

Corn.....	100 lbs.
Wheat.....	100 lbs.
Oats, barley, buckwheat, or kafir corn.....	100 lbs.

Scratch feed should be cut down to 8 to 10 pounds per 100 birds per day: one fourth of this amount fed in the morning, one fourth at noon, and one half at night, or one third in the morning and two thirds at night.

Feeding scratch in this way will tend to drive the birds to the mash, which they must eat to lay. The birds, when this ration is fed, are just about ready to lay, and it will push them across in good, uniform shape, and unless something wrong happens in quality of feed, during the fall and winter they should go through with a pretty steady flow of eggs.

If the production drops to any extent, and they begin to show a winter molt, take them off this laying schedule immediately, and feed the pre-lay rations described above for about two or three weeks. Then put them on the laying rations again.

In making all of these changes in feeding, both as to mixtures and as to amount to feed, it should be done gradually. Especially is this true as to amounts of the scratch feeds fed daily.

Most modern-day strains want to lay in the fall and winter, and will, if conditions are right. This applies to the farm flock as well as it does to the commercial poultry flock. The old idea that farm flocks won't lay during the winter is tommyrot.

They will if given right care, and usually this means well-grown, well-conditioned pullets with the right kind of rations, well fed.

The grain consumed in producing a dozen eggs varies considerably with the different breeds. Since the prices of grains vary greatly in different sections and in different years, the grain consumed in producing a dozen eggs, not the cost, were considered in the following experiment by the U. S. Department of Agriculture. Several different pens of general-purpose fowls

produced an average yield of 130.5 eggs as pullets and 88.1 as yearlings, while the Leghorns produced an average of 138.7 eggs as pullets and 124.9 eggs as yearlings. During the year the general-purpose pullets ate an average of 6.7 pounds of feed per dozen eggs produced, and the yearlings ate 9.6 pounds. The Leghorn pullets ate 4.8 pounds, and the yearlings 5.5 pounds. The general purpose pullets ate 1.9 pounds more feed in producing a dozen eggs than the Leghorn pullets, and the difference increases very rapidly with the age of the stock, the general-purpose yearlings consuming 4.1 pounds more feed per dozen eggs than the Leghorn yearlings; therefore, the Leghorns produced eggs more cheaply than the general-purpose breeds. The value of the general-purpose breeds for market or for hatching and breeding makes them usually the most desirable breeds for the general farmer and the backyard poultry raiser, while the Leghorns are especially adapted for commercial egg farms.

More Money, But—

THE value of crops produced in the United States in 1919 was nearly three times greater than the average annual value during the five years preceding the outbreak of the European war, according to the report of the Secretary of Agriculture. This does not mean, however, that farmers are making three times as much money, for costs have increased proportionately.

"On the basis of prices that have recently prevailed," says the Secretary, "the total value of all crops produced in 1919 is \$15,873,000,000 compared with \$14,222,000,000 for 1918; and \$5,829,000,000 for the five-year average, 1914-1919. These values represent gross production and not net returns to the producer. The value of livestock on farms in 1919 was \$8,830,000,000 compared with \$8,284,000,000 in 1918, and \$5,318,000,000 for the five-year average.

"This increased financial showing, it is again necessary to emphasize, does not mean that the nation is better off to that extent, or that its real wealth has advanced in that proportion. The increased values, however, do reveal that the monetary returns to the farmers have increased proportionately with those of other groups of producers in the nation, and that their purchasing power has kept pace in the rising scale of prices."

How Seabrook's 30 Acres Became the World's Biggest Truck Farm

By Charles Seabrook

In an interview with F. F. Rockwell

CHARLES SEABROOK is a farmer who dreamed a dream of successful farming and made it come true. He started as a youngster with 30 acres of fairly good land in New Jersey. He had no capital. That was not so many years ago. To-day he owns the largest truck farm in the world, and his original 30 acres is part of it.

When he started he was selling lettuce by the dozen to a small local market. To-day he is selling lettuce by the carload to the country's biggest markets. He began with sales of a few thousand a year. Now his sales are over half a million a year, from some 1,200 acres under the most intensive cultivation—each, in brief, is the story of Seabrook Farms, of Bridgeton, New Jersey.

Seabrook himself is still under forty. He is still going strong—feels, in fact, that he has just started.

What are the secrets of his remarkable success? In this article, Mr. Rockwell tells, in Mr. Seabrook's own words, what the man who has built up this wonderful business considers the foundation stones of his success.

The encouraging thing about it is that what Seabrook has done is not out of reach for you and me. He was just a plain, everyday farmer who knew what he wanted to do, mixed common sense and determination, and did it!

THE EDITOR.

body asks about—is the labor problem. Usually the first exclamation of anyone viewing the hundreds of acres of close-planted crops on Seabrook Farm is:

"Where on earth do you ever find help enough to take care of it all?"

Now, a very large part of my personal time is given to my "help." At Seabrook Farms, we don't speak of labor with a capital L. One of my big jobs has been to keep the same intimate personal touch with my men, now that the business has grown big, as I did in the old days when there were only a few "hands." There has always been a mighty big difference between

mind" can't do good work himself, and he doesn't have a good effect on his fellow workers. So I have always made it a point to thrash things out immediately, and not leave any chances for a misunderstanding.

Another thing is to keep the road open ahead of every man. No one can work with any enthusiasm if he feels it isn't going to get him anywhere. Ambition is the big mainspring of effort everywhere, and it's no different on a farm. We try to advance the good men just as fast as we possibly can—that's one of our first principles in keeping help. We feel that the more we can help them to earn for

of men under him, and the result has been very satisfactory both to him and to us.

We try to keep our workers ahead of their work. You know how discouraging it is to feel that your work is gaining on you—that, try as you will, you can't catch up. It's the same way with the men. We find it has a good psychological effect to keep them ahead.

When there is a job to be done we concentrate a big enough gang on it to clean it up quickly. A delay of even two or three days in getting at any job that's ready to be done may double or treble the work necessary to do it. That, of course, is as true of the farm or market garden where only a few men are employed as it is in our own case.

Often we arrange work to keep our people busy when we could just as well let some of them go—we try to hold all we possibly can throughout the entire year. Finding work for them through the slack months makes better workers for us through the busy ones.

In addition to this, I may add, the Seabrook Corporation does all it can to help its workers in other ways. A complete modern sanitary village is being laid out. There's a company store that saves them thousands of dollars a year in purchasing. There's an arrangement by which any who want to can manage to buy cars, with the company's help in financing the deal.

OF COURSE, the farmer who is operating on a small scale can't have a store for his help or lay out a model village. The thing he can do, however, is to get the coöperative point of view toward the men who work for him. He can be always ready to hear complaints—he can prevent misunderstandings from hanging fire until there is danger of an explosion when it isn't looked for. He can often keep his men on by undertaking some constructive work instead of figuring out how to drop them at the earliest possible moment.

This all helps toward uniform quality production.

Many persons who come here, having heard of our Honey Heart Strawberries and Seabrook's big Boston Lettuce, seem to be under the impression that our success is due to specializing.

I think this matter of specialization can be carried too far, and often is. We have no rule. I may say, we specialize as much as possible, while keeping an even labor distribution. Too much of one crop means too many slack periods alternating with rush periods in the work to be done.

There's another thing too—specialization should be attempted only after quality has been established. Quality is necessary anyway, but it is doubly necessary if you are going to specialize.

No one can be [CONTINUED ON PAGE 26]



Charles F. Seabrook

Seven Points Any Grower Can Use to Start Toward Success

I'VE been asked to put in a few words what I think the beginner can do to start toward success. I guess there isn't anything very new about it, but it has worked for me, and will for you.

First, make the keystone of your work *quality products*.

Second, there's labor. *Try to understand your men.* Clear up any misunderstanding as soon as it arises. Try to keep them the year around.

Third, have some "specialities," but do not go to extremes. Plan your rotation to keep going all the time.

Fourth, use a brand or trade-mark—but not until the *quality* of your product is assured.

Fifth, keep the deposits in the soil fertility bank ahead of the crop checks you have to draw out against them. You cannot neglect this and make money in the long run.

Sixth, to make sure of products of a uniform quality, season after season, use irrigation on the more intensive crops. You cannot afford to take chances with the weather. Even a partial failure not only loses one season's profits, but—what is much more serious—also may spoil the reputation for quality which it has taken many years to build up.

Seventh, in selling remember that any one season's sales are only a small part of the business you expect to do with the men you are selling to. Apply the golden rule constantly and consistently.

CHARLES F. SEABROOK.

the "farm hand" and the "factory hand."

When one of my men comes in from the field to see me about anything, he is not put off or kept waiting longer than absolutely necessary. His case is given just as prompt attention as any other important business. Often, of course, the grievance may be trivial, or even entirely imaginary; but, after all, it's the things we *think* that really count—isn't it? Whether they're thoughts of success or thoughts of trouble. The point is that, *to him*, his grievance looks big and serious. Now, the worker who is going about with "something on his

themselves, the more they can help to earn for us.

It's wonderful, too, sometimes, what giving a man a little responsibility will do. I have one man who is now in charge of a field gang. He showed ability from the start; but he didn't seem contented, and he was making a lot of others discontented also. In the factory he came from he was a good deal of an "agitator." In some places, under the circumstances, he would have been fired. But we put him where he had a chance to use his head as well as his hands, and was responsible for the work

This picture shows girl workers cultivating some of the irrigated fields at the Seabrook Farm. Note the irrigation pipes on both sides



Farming in Art



NONE of her paintings are half so remarkable as was Rosa Bonheur herself, whose pictures of animals are famous the world over. Her house was always full of animals, lions, dogs, goats, and once she had a pet otter that used to climb out of its tank and slide into Rosa's bed between the sheets, and soak the whole mattress. She wore men's clothes, but once in woman's clothes she was arrested because the police thought she was a man. She died in 1899.



THIS is a French haymaker going home to supper after the day's work, painted by the Frenchman Adan. There is no back-to-the-farm problem in France, for the farmers stay back of their own accord, farms passing from father to son for generations. Many of the world's best painters have come of farming stock. Indeed, so much do these people love their farms that when in the advance of the Germans they were ordered to flee old men and women were found hiding in the fields, more afraid of what might happen to them in the outer world than of any danger in their farm lands.



"THE Angelus," by Millet, is probably the greatest painting of the day, and it is of farmers and by a farmer. Twenty years after the artist finished it, in 1859, it sold for over \$100,000, but Millet himself only got \$500. He had worked in the fields with his father and mother long before he ever saw a paint brush, but the hard work didn't injure his hands for the work he took up later. When years later his painting of country life had made him famous, he lived in the small French town of Barbizon, and spent his mornings looking after his garden. Millet died in 1875.

GEORGE MASON, 1818-1872, was rich and gifted, and his life was a very glittering affair, but he will be most known as the painter of "The Harvest Moon," which hangs in half the farmhouses of this country. It was his last picture. It seems he must have tired of the wealth about him, for he came home to his English farm in his last year. He had lived much in Italy, and had even tended the wounded in the war of Garibaldi, and been himself almost shot for a spy. He was born in 1818, and died in 1872.



THE U. S. bought this picture, "The Balloon," for the Metropolitan Museum. Julian Dupré, the artist, began painting on china at Sevres, decorating the plates with views he had noticed in his rambles. One day a nobleman who loved the country was reminded of his life there by some of Dupré's pictures. He was a strange person, and appeared one morning at Dupré's lodging at five o'clock, looked over all the pictures, and bought every one, throwing a handful of gold on the table. It was the start the young artist needed to land him in the big galleries, comfortably, before his death in 1889.



FARMERS' daughters no longer do this sort of work—even if they do any at all. But Jules Breton, 1827-1906, found in them a beauty at which he used to lie and stare for afternoons as they strode back and forth in the fields. He was only a coming young artist when he did "The Gleaner," and, much as he had liked it, he finally only finished it and sent it to the exhibition because he found a frame in the barn that it fitted. But it made a furore, and was the first mark he made in the world of art. Breton lived in Paris, in a room he got for \$40 a year.

Ways Motor Trucks Are Saving Time for Some Farmers I Know

By Francis Z. Hazlett

ASK any farmer who owns a motor truck—and there are a lot of them—what he has found to be the greatest advantage of a truck for farm use and the chances are he will answer, "Saving time."

There are occasions during the busy season on nearly every farm when every hour taken from fieldwork means a distinct loss, and there are also times when every hour produce is kept off the market means a distinct loss. In these days of scarce and high-priced help motor trucks are helping every class of farmer to cut down both of these losses.

Corn belt farmers are finding that the motor truck saves valuable time, even though the marketing of their grain and livestock and the hauling of feed and supplies to the farm do not take as much of their time as does the hauling to and from a truck farm, a fruit farm, or a large dairy farm.

I was in a little town in central Iowa last fall when a young fellow with eighteen 250-pound hogs drove up to the unloading chute beside the railroad. When the hogs were unloaded I asked this man if he had time to tell me something about his motor truck.

"Well," said he, "I live on my father's farm eight miles and a half north of here, and this is the nearest railroad station. I raise a good many hogs, and it formerly took twelve men and teams to haul a carload. It is such a long haul that the trip killed most of a day. Besides all the trouble of getting the neighbors to help me, it would take me eleven days to pay back their help. And some of them would be sure to want me when I was as busy as could be."

"Since I took over the running of the entire farm, all my time is needed at home; so I bought the truck, and now I deliver a carload myself in one long day. I have sold six carloads of hogs this year, and besides this the truck has hauled about 500 bushels of wheat, 1,000 bushels of oats, and a good deal of miscellaneous stuff. When the roads are good I make the round trip of 17 miles in about an hour and a half."

AFTER a year's trial this man was well pleased with his investment in the truck, even though he had paid \$1,600 for it, a license fee of \$30 a year, and a repair bill to date of about \$50. Another man in the same county, said:

"Maybe the truck is more expensive than horses would be if you could get help when you need it. But when you have a couple of thousand bushels of grain to get to the elevator, or a hundred head of fat hogs to market, the question is not, 'What does it cost?' but 'Can you get the work done at all?' One man even with a one-ton truck like mine can do as much as three men with teams on a hot day. I wouldn't want to sell mine at any price if I couldn't get another."

Some farmers in every State in the Union are using motor trucks. More farmers purchased trucks last year than in any preceding year, and the probabilities are that more men will add trucks to their equipment in 1920 than did in 1919. Of course, a motor truck costs money; it costs money to operate one; and there are many farms where the amount of hauling is so small, or the distance to market so short, that the purchase of even the smallest and least expensive one would not be warranted. For others it will be cheaper to hire a motor truck.

But if you are a long distance from market or shipping point, if your hauling takes time which is needed for other work, and if you cannot hire a truck at a reasonable price when you want it, I am sure that if you will talk to a dozen men who own

trucks, and have used them long enough to know their worth, you will be convinced that one would be a valuable addition to your equipment. The owner of a 50-acre truck farm in central New York who has been using a one-ton truck for two years told me:

of help my truck-gardening would be unprofitable without a motor truck to do the hauling."

I happen to know two large truck farmers who have been using motor trucks for more than five years for hauling to the Philadelphia market. They have certainly



After Apple-Picking

MY LONG two-pointed ladder's sticking through a tree

Toward heaven still,
And there's a barrel that I didn't fill
Beside it, and there may be two or three
Apples I didn't pick upon some bough.
But I am done with apple-picking now.
Essence of winter sleep is on the night,
The scent of apples; I am drowsing off.
I cannot rub the strangeness from my sight
I got from looking through a pane of glass
I skimmed this morning from the drinking trough
And held against the world of hoary grass.
It melted, and I let it fall and break.
But I was well
Upon my way to sleep before it fell,
And I could tell
What form my dreaming was about to take.
Magnified apples appear and disappear,
Stem end and blossom end,
And every fleck of russet showing clear.
My instep arch not only keeps the ache,
It keeps the pressure of a ladder-round.
I feel the ladder sway as the boughs bend.
And I keep hearing from the cellar bin
The rumbling sound
Of load on load of apples coming in.
For I have had too much
Of apple-picking: I am overtired
Of the great harvest I myself desired.
There were ten thousand thousand fruit to touch,
Cherish in hand, lift down, and not let fall.
For all
That struck the earth,
No matter if not bruised or spiked with stubble,
Went surely to the cider-apple heap
As of no worth.
One can see what will trouble
This sleep of mine, whatever sleep it is.
Were he not gone,
The woodchuck could say whether it's like his
Long sleep, as I describe its coming on,
Or just some human sleep.

From "North of Boston," by Robert Frost

(Courtesy Henry Holt Company)

"I raise about 150 tons of vegetables a year, and it is eight miles to market. With the team it usually took six or seven hours to make the round trip. With the truck I am seldom away more than four hours, and sometimes I get back within three hours of the time I start. You can count up for yourself how much time the truck has saved me. My only regret is that I didn't buy one sooner."

A man with a 25-acre garden farm about 20 miles from Buffalo gave as his opinion: "With the present high wages and scarcity

owned and used trucks long enough to know their value. Both say the greatest advantage of their trucks is in saving time. One of them summed up his experience somewhat as follows:

"I paid \$2,750 for my 3½-ton truck, and I haul about 300 tons a year into Philadelphia with it. The distance from my farm to market is just 28 miles, and I make the round trip in six hours on the average. With horses the trip would take from four o'clock in the morning until eight at night. I figure that the truck saves about \$1,200

worth of my time and my horses' time in a year, and while it has cost me nearly \$500 for repairs in the last three years, I believe it is still the most profitable piece of equipment on the farm. I don't know how much longer it will last, but when it is gone I want another just like it."

The other man has a four-ton truck of a different make for which he paid \$3,800. He has about 70 acres in sweet corn, potatoes, and beans each year, and says:

"With labor conditions as they are I wouldn't think of trying to farm without a truck. Our round trip from farm to market is just a little over 50 miles, and with the truck I make this trip in half a day or a little more. With horses it took 15 to 18 hours. During 1919 I made more than a hundred trips, and if I had not had the truck I would have needed at least one more man and three more horses."

THE fruit grower usually must face the task of doing the bulk of his year's hauling right when time is worth the most to him. No difference whether he has a small place where he and his family do most of the picking and packing and marketing, or whether he has a large place and hires most of his work done, anything which will enable the fruit grower to cut down the time required for marketing or enable him to reach a better market is worth much more to him than the mere difference in the cost per ton-mile of hauling. An elderly farmer in northeastern Pennsylvania in explaining why he owns a motor truck said to me:

"I have about 30 acres here, eleven of it in apples and about four in berries, and it is 16 miles to my market. Help has been so scarce that I have had to do nearly all my work myself for the last two or three years, and in the summer of 1918 I was so worn out with long hours and hard work that those long five to six hour drives to market with the fruit set me to thinking about a truck. I felt that I couldn't stand it to keep on working all day and then start to town at midnight so as to be there when market opened. I bought a three-quarter-ton truck that cost \$1,500 just before the berries were ripe, and so far I haven't regretted it. Now I am on the market in a little over an hour from the time I leave the farm. I get a good night's sleep before I start, and get back home in time to do a half-day's work. Of course, now that I have the truck I use it for lots of things besides marketing the fruit."

An orchardist in Greene County, New York, who has 50 acres in apples and peaches told me in reply to my queries as to how his motor truck had been of help to him:

"The principal advantage of our motor truck is just this: With it the road hauling is done in less than half the time it would take to do it with horses. I am six miles from my shipping point, and last year the truck hauled about 200 tons of fruit, 50 tons of hay, and 15 tons of coal, making the round trip in about two hours and a half on the average. With team and wagon the trip takes five hours. The truck saved about sixty days of time, most of it right when time was worth the most."

An Ontario County man who farms 160 acres, forty of which are in orchard, informed me:

"Lack of help in the summer of 1918 was responsible for us buying a truck. It looked like we were going to lose a lot of our fruit that year, but with the truck we saved it all. Just what our loss would have been I do not know, but I am confident the truck was worth \$500 net to us that year alone. The farm is only four miles from the railroad, but the truck will haul nearly as much as three teams."

The dairy farmer [CONTINUED ON PAGE 36]

When My Nerve Was Worth \$125

Story of a farm woman, a carving knife, and a bloated cow

By Alta Booth Dunn of Cody, Wyoming

Illustration by Tony Sarg

LISTEN, farm ladies! What would you do if you should go out to the corral or barnyard and find one of a herd of a dozen or so milch cows stretched out dead, another puffed up like the proverbial poisoned pup and literally staggering on her last legs, weaving in and out among the others so that their condition could not be determined, and yourself alone on the place and no men-folks within a mile? And this when you had seen all of these animals walk tranquilly in from grazing little more than a half-hour before.

This is just the situation I had to face one day last August. Some quick thinking, and nerve to follow it with equally rapid-fire action, saved a cow worth around \$125. This cow recently brought us a fine heifer calf, which also must be included in the value of the salvage.

It was Saturday shortly after noon. My husband and young son had just started on the weekly trip to town, leaving me at home alone. I had settled down to the important and altogether delightful business of trimming a hat for myself, rejoicing in the quiet and the prospective freedom from interruption.

After a few moments I became conscious of the bawling of a cow. Thinking it was a mother calling her calf, I paid little attention at first, though I was annoyed at this disturbance. The clamor increased so that presently I recognized this as the cry of an animal in distress. Then the thought struck me:

"Why, that sounds like the bellowing of the calf that died of alfalfa bloat last year." I had heard it, but did not go to investigate, and later the calf was found dead. "Perhaps I'd better go take a look," I said to myself. But I did hate to leave that hat!

I stayed not upon the order of my going when the possibility of a case of bloat occurred to me. I ran to the corral. A fine young cow that had freshened only a month or so before lay dead by the barn—blown up tight as a toy balloon and legs sticking straight out.

But I wasted no second thought on her. For expert knowledge was not required to tell that the beast whose bawling had alarmed me—one of the largest and best cows in the bunch—was already well-nigh in death agony from bloat.

Though I did not know it at the time, I learned later that, owing to shortage of pasture due to extreme drought, the cattle, after filling up pretty well on other grasses, had been allowed to graze along ditch banks and other spots where

it had not been feasible to cut the alfalfa at haying time.

This practice was considered comparatively safe because of the relatively small quantity of alfalfa consumed, and the fact that this was somewhat ripened. But no doubt the affected animals had found some very green new growth and gorged on this—bloat being the almost inevitable consequence.

With paunch terribly distended, and protruding above the level of the backbone, the afflicted beast staggered and swayed among the others: eyes popping, gasping for breath, slobbering a whitish foam, she bellowed constantly in a frenzy of suffering.

In an instant I had grasped the situation. I flew back to the house. I called my nearest neighbor on the phone. Her husband was away. I rang the next. Fortunately she answered at once. Briefly I explained my dilemma. She promised to hunt up some men and send them at once to my aid. All this took but a moment or two.

This done I made for the corral again. Realizing the need for the utmost haste I grabbed the first knife which came to my hand as I passed through the kitchen. This happened to be an ivory-handled carving knife with a thin, flexible blade eight inches long. Though my survey had been too hurried to ascertain the condition of the rest of the herd, I knew that the only chance of saving this one cow was to stick her, and that instant.

NOW, I had never stuck an animal, nor had I ever seen it done. Furthermore, I had always imagined that I'd never have sufficient nerve to do such a thing, however urgent the need, inasmuch as I never had been able to bring myself to killing a chicken, even when my pastor dropped in

unexpectedly for supper. Though once, when writing an article about a woman who had saved the lives of a number of blooded dairy cows by this means, I had read up on the subject, so knew something of it technically as well as by local hearsay.

Some old-timer had told me that a quick and fairly accurate way to locate the place to stick was to span a hand's length forward from the left hipbone—the paunch lies to the left side—and that point at the end of this span would be approximately

Whistle— But Have the Steam!

"DON'T be like the little, trifling steamboat we used to have puffing about on the Sangamon, with a seven-foot whistle on a five-foot boiler, so that every time it whistled the boat stopped!"

ABRAHAM LINCOLN.

"the center of a triangle formed by the left hipbone, the last rib and the backbone," which same, according to veterinary books, being the correct place to open the paunch.

A trocar, a sharp-pointed instrument of rather heavy steel and of about three-eighths of an inch diameter, designed for such purposes, should be used if

possible, this being pointed in and downward obliquely to avoid the kidney.

However, I found some difficulty in carrying out these instructions. For the frenzied beast, lurching like a ship about to go down, kept moving just beyond the reach of my hand, so that it seemed she must drop before I could stick her.

When I finally located what I thought was the proper spot, the knife blade was so thin and pliable that it merely wobbled under my hand when I tried to push it in, and at first I could not puncture the tough hide which was stretched tighter than any drumhead. A quick, sharp stab should be given. Of course I should have had a trocar, common as bloat is in the alfalfa country; only gross carelessness and neglect were responsible for my poor equipment for such an emergency.

Possibly it was two minutes before I finally managed to plunge the knife into the paunch to a depth of about four inches; being none too sure of bovine anatomy, I feared striking the kidney. Also I had heard sundry tales of reckless slashing of bloated animals that later either died of their wounds or had to be killed because the operator in his haste had lost his wits.

I was somewhat relieved to hear the hiss of escaping gas, and later a bubbling of green foam, follow the knife blade as I withdrew it. But the cow was so far gone that even then I expected to see her drop before this

would bring alleviation, and when a bloated beast once gets down it's good night!

Still, I did not give up. To break up the food mass

and to help expel the gas, I began a vigorous kneading and working of the paunch—not an easy task because of its being so tight and hard—and from time to time scraping away the excretion from the opening with the back of my knife to keep it from clogging.

In five minutes or so the afflicted animal commenced to appear a trifle easier, though I kept on in this manner until the arrival of three men from the family of the neighbor to whom I had sent my emergency call, and who came roaring up in their car some fifteen or twenty minutes after I had asked for help. However, if I had waited for them their help would have come too late.

But before this time I had managed to find out that the rest of the herd were not affected. My neighbors, experienced in such matters, had brought trocar and cannula. The latter—a nickel tube for the purpose of keeping the incision open—we placed in the one I had made, which they informed me was about four inches too low, but not over-large.

So great was the suction that it was necessary to watch the cannula for some time to keep it from being drawn into the paunch, as well as to prevent obstruction. To expedite matters, the men fixed a gunny-sack gag in the cow's mouth, and within an hour she was again down to normal.

THAT evening axle grease was daubed about the incision to keep away flies, and a fly repellent was applied for a long time, as this wound did not close for several months. Fortunately, however, this was so small and so located that there was no attendant trouble.

And after it was all over, and the neighbors had gone, did I call it a day and knock off to indulge in a fit of hysterics? I did not. I put on a clean dress—for I needed one—and with the virtuous air of one who has performed a disagreeable task creditably I sat down with even greater gusto than before to trim that hat. And I don't in the least mind telling the world that I made a good job of it, too!

I now keep in a convenient cupboard drawer a bright new trocar and two cannulas, and, like all braggarts, I'm right now touching wood so that I may never have to use them. But this I know: in case the need arises I shall at least be equipped to meet it.



The frenzied beast, lurching like a ship about to go down, kept moving just beyond reach of my hand, so that it seemed she must drop before I could stick her

Things I Have Learned From 25 Years as a Fruit Grower

By Frank A. Waugh

THEY say a glacier moves slowly. Yet by setting up a row of stakes across the glacier field one can easily see by the bending of this row the progress made as months and years go by.

We are sometimes pessimistic about the progress made in agriculture; but about a quarter of a century ago I had the opportunity to set up a row of stakes across the horticultural field, and now when I look back at that row of pins I can see that there has been a real forward movement all along the line. In spots the pins have been carried out of sight by the swift progress of the years, or were swallowed up in the crevasse of revolutionary improvement.

If now I enter upon some history of these changes which I myself have seen, I hope not to present the spectacle of a doddering old man droning over the days of his boyhood, but rather that of a youngster looking forward to new achievements, and estimating the possibilities of the future by the established rate of travel.

To begin with, varieties have changed. Not one named variety of tomatoes, sweet corn, melons, cucumbers or beans grown in my father's garden is to be found in commercial use to-day. My father grew Wilson's Early Strawberry. After that came Crescent, Michel's Early, and others, which in turn have been superseded by better sorts. Hale (not J. H.), Amsden June, and George IV were considered standard varieties of peaches in those days. Not one of them can now be found outside of a horticultural museum.

The variety list in the apple orchard, both family and commercial orchard, has shown notable changes. In the York State-New England region Baldwin, Spy, and Greening were established market favorites, and they still stand their ground. But the market also counted on Yellow and Belleflower, Golden Russet, Roxbury Russet, Holland Pippin, Gilliflower, Porter, and others which have all but disappeared.

In the meantime, several of the most popular modern varieties have originated or have come to the fore. McIntosh and Delicious, probably the two apples having the greatest vogue at the present moment, were unknown twenty-five years ago. So was Wealthy, certainly one of the most valuable commercial apples of 1920. Winesap and Grimes were known twenty-five years ago, but their commercial exploitation is recent. Stayman, the improved Winesap, is newer yet. Even Ben Davis was comparatively unknown and harmless a quarter of a century ago. During this time it has reached the zenith of its popularity, and is now in the decline.

IN FACT, it might be said that the whole idea of the commercial orchard is new within twenty-five years. A quarter of a century ago the man who planted a hundred trees was a plunger. An orchard of 1,000 trees was almost unheard of. The really big orchard of 1,000 acres, owned and managed by a stock company, had not been dreamed of. Nobody had ever sold unit orchards to dry-goods clerks on the installment plan.

If apple orchards in the modern commercial sense had not yet been planted, neither had the marketing of fruit in the modern way ever been practiced. Apples, peaches, pears, and plums had of course been sold in the corner groceries ever since the Yankees of Massachusetts Bay Colony had found any opportunity to exercise their faculties of trade, and the selling of apples at least was so far standardized as to recognize the 96-quart apple barrel. A large percentage of other barrels of other sizes, however, were used also.

However, the barrel was the only standard package. Since that day the California-Oregon apple box has been discovered, improved, refined, introduced in the Eastern States, and has generally gone through a picturesque career of evolution and devolution. Other apple packages have come into extensive use among large growers, some of whom buy bushel baskets by the carload, others of whom use half-bushel Jersey peach baskets, while down Boston way they have settled pretty much to the vegetable growers' square bushel

box. All of which shows a vast amount of change at any rate, and we may hope that the net result stands for improvement.

In the matter of varieties and grades the change has been almost as great, and the improvements more definitely manifest. Twenty-five years ago the market was most uncritical with reference to varieties. Any green apple was called a Greening, and almost any red apple would sell for a Baldwin; whereas a striped apple was called Spy or a Seek-No-Further.

In those old days grades of fruit were marked mainly with X's, and the more X's a man put on his barrel head the more he

largest orchards then existing were still innocent of any sort of spray apparatus. Look at the situation now. Consider the big spray pumps, the diverse formulas, the refined technic whereby the grower selects the precise day and hour when the pestiferous little green aphid is off his guard. Consider the long list of chemicals standing on the fruit growers' shelves, and the prescriptions he puts up for his patients.

SPRAYING does not represent the only improvement in the technic of production. The everyday use of cover crops is a comparatively new practice introduced

Great progress has also been made in the art of using fertilizers. It is very hard to say just how great this progress is, because we do not know to-day exactly where we stand. At any rate, we are not at this time recommending *naturam muraticum*, as Horace Greeley did (they say). We are not using guano any more, or at least very little of it—though we would undoubtedly be glad to use it if we could get it. We have a comparatively rational system for feeding our orchards—comparatively I say, hoping that the comparison will be made with the practice of twenty-five years ago, and not with what will be twenty-five years hence.

What of the future? For, after all, I am much more interested in the future than in the past. And, as Patrick Henry once remarked, the best way to judge the future is by the past. If we have been able in any way to estimate the progress of our horticultural glacier by the changes in our row of stakes, we may be able to predict with some confidence the improvements of the next quarter century. In this estimate we may fairly take into our formula the well-known law of acceleration. For the progress of civilization is ever faster and faster as the years accumulate. Thus we may be morally certain that the next twenty-five years will bring us greater improvements, and more of them, than the last twenty-five. So let us turn our imagination loose, and picture ourselves and our orchards as we shall be managing them (or our sons and daughters) a quarter of a century hence.

FIRST of all, I expect to see some big changes in the list of fruits grown. There will be improvements and important additions. It is more than possible that very valuable fruits will be brought into cultivation, the very existence of which we do not now recognize; more probable that some fruits now unconsidered will leap into horticultural knowledge and public favor. Remember that the grapefruit, now worth millions in our horticultural commerce, was practically unknown twenty years ago, and that so indispensable a fruit as the strawberry was almost unknown fifty years ago. It is only sixty-six years since the Concord grape was introduced and the grape-fruit industry begun.

It is possible, of course, that the plant breeders may give us something revolutionary. Possible, but not probable. For with all the advertising stuff about hybrids between the strawberry and the milkweed, and all that sort of nonsense, the fruitful years of the recent past have not produced anything worth while of that kind. The patient plant breeders who aimed at less spectacular results have indeed done much, and we may accordingly expect valuable contributions from them.

To specify: I shall hope to see many useful additions to our list of market peaches. Our present repertory is lamentably short and weak. It is easy to imagine a variety with the quality of Foster, the shipping ability of Elberta, and the hardiness of Greensboro. The gaps in our peach list are conspicuous, and good varieties to fill these gaps will have greater commercial value than all the hybrids ever to be concocted between apricots and mushrooms.

In the same way we would accept with joy certain new kinds of pears, for which specifications might easily be written. Any bright autumn morning we may wake up and find the horticultural world in possession of a new pear, with the quality of Bartlett or Bosc growing on a tree as hardy and as universal as a Ben Davis. Indeed, we almost have that tree now in the Kieffer. But just give us a Bosc pear on a Ben Davis tree and we will plant millions within the first decade.

In the eternal job of fighting insect pests and fungi we can rightfully expect to make real progress in the next few years. It has been found possible to subdue and practically to eliminate from our orchards the San José scale, an insect which the entomologists of twenty-five years ago promised us would wipe out the fruit-growing industry. While spraying is still a heavy charge on the industry, and likely to remain so, it does not seem to be the burden it once did. This is because it seems to be so much less a hazardous [CONTINUED ON PAGE 44]



Photo from W. C. Harris

A FELLER isn't thinkin' mean,
Out fishin';
His thoughts are mostly good an' clean,
Out fishin'.
He doesn't knock his fellow men,
Or harbor any grudges then;
A feller's at his finest when
Out fishin'.

Edgar A. Guest—From "The Path to Home."
(Courtesy of The Reilly & Lee Co., Chicago)

claimed for the quality of his pack. It was by no means common to see a barrel marked Greening, and if an enthusiastic packer had the time he was likely to print this cabalistic sign clear across his barrel head. Dealers have told me of receiving packages from up-country with no less than twenty X's marked on the head, after which they would find pumpkins in the middle of those barrels. While we do not yet have the universal standard backed by federal laws, as some persons would like to see it, we have certainly made progress in grading and branding fruit.

However, the greatest progress of the past quarter century is probably to be seen in methods of cultural practice. The most obvious of these is the practice of spraying. A quarter of a century ago the first experiments were being made in the use of Paris green and London purple to poison the children of the codling moth. It was still a question whether such an operation was worth while or not, and thousands of the

within the past quarter of a century. While the practice of growing cover crops is not yet universal, and never will be, and while it does not constitute such a revolutionary change in orchard management some of its protagonists used to expect, yet it is certainly a standard item in orchard management, and is used extensively.

In the matter of tillage and tillage tools great advances have also been made; but I think the greatest advance in this field is in the idea of tillage itself. Originally it was looked upon a great deal like manual labor, in general, as a punishment handed down from Eden, and not essentially necessary. Farmers used to cultivate in order to get rid of weeds, and rarely for any other reason. Now tillage is practiced for a great variety of very deep-going purposes, such as the aeration of the soil, the maintenance of drainage, the improvement of the physical condition of the soil, the release of plant food, the acceleration of nitrification, and all such high-brow arguments.

There's Money for You in Feeding Lambs

By George M. Brigham



County Agent Van Hoesen of Montgomery County, Maryland, and the pig club he organized. The boys are holding the purebred Berkshire pigs with which they made their start

How One Boys' Club Got Its Start

IF THE supply of purebred pigs in your county is not sufficient for the boys' pig-breeding club, the method employed by F. J. Van Hoesen, county agent of Montgomery County, Maryland, is worthy of emulation. After organizing a breeding club of thirty-six boys at Damascus, Montgomery County, he discovered that he needed ten more purebred pigs so as to allot one to each member. Recalling that the state extension department maintained a list of breeders, Mr. Van Hoesen enlisted their help.

Together with a representative from the Maryland Extension Department Mr. Van Hoesen motored 87 miles to Leonard Hall, St. Mary's County. The required ten Berkshire pigs, nine weeks old, were purchased at \$12 apiece. The photographs show the reception they got on their return home. The boys were happy to get the pigs, while the county agent had the satisfaction of having done real service.

How were the boys enabled to buy the purebred stock? Your guess, perhaps, would be through loans from banks or through the generosity of some individual or organization. Not so. The county agent in each instance persuaded the father of the boy to invest in the breeding

enterprise. So the fathers entered into the partnership from the start, instead of being converted after the boys had demonstrated the merits of purebred animals.

Another unusual feature about this Damascus breeding club is that the prize money won in stock shows has been pooled instead of being distributed among individual members. With this fund a registered boar has been purchased, ownership of which is shared equally by the thirty-six members of the club. The services of the boar are available to club members at a fee of \$2, while non-members of the club are charged \$4. Thirty-four of the thirty-six pigs originally purchased have farrowed.

S. R. WINTERS.

Velvet Beans Did It

SOUTHERN cattlemen might find it practical to follow the advice of the Bureau of Animal Industry, United States Department of Agriculture, which recently worked out an interesting cattle-feeding experiment in Florida.

The cattle in the velvet-bean field gained less, but made a bigger profit than the herd which was in a velvet-bean field only a short time and then was taken out and put on a more expensive diet, including sorghum silage and cottonseed meal.

In one case, 220 native steers, three to five years old and averaging 582 pounds per head, were turned into an 80-acre field of velvet beans early in November. After 28 days the animals averaged 590 pounds, and the feed was changed to sorghum silage, velvet beans in pod, and cottonseed meal. On the 84th day, when the test ended, it was 644 pounds. The average daily gain per head was approximately three fourths of a pound. The ration was not the typical fattening ration used heretofore, but was one used to secure a comparable degree of finish. Had grain been fed in addition, probably a greater gain would have been secured. There was a \$2 margin and a profit of \$4.02 per head.

In the second experiment, 116 native steers similar to the first herd were pastured on an 85-acre field of velvet beans for 72 days, beginning at about the same time of year. They lost considerable in weight for a part of the second month, but there was a daily average gain for the whole period of a little more than one-fourth pound per steer. The pasture charge in this case was \$9 per acre, and the profit \$6.35 per head. The margin was \$2.

EVERY breeder of purebred hogs can make a profitable investment of a few dollars and a few hours' time by constructing a small quarantine plant on his farm. Such a plant will safeguard the herd from disease introduced by stock from other breeders. I have found it a wise rule to keep in quarantine for at least three weeks every hog brought to the farm. The new arrivals should be closely watched, so that if any disease symptoms appear the animals may be dealt with accordingly.

A quarantine pen should be from one-half acre to an acre in size. The home herd should be excluded from it at all times, and should not be allowed to pasture close to it. Many breeders locate them in out-of-the-way places, often at some corner of the farm. Enclose a well-drained area with a heavy, woven-wire fence, which should be high enough to prevent hogs from jumping over it. Place an individual hog house in the lot, and install a dipping tank and troughs. A stockyard-style platform entrance, with inclined chute leading from the platform to the level of the pen, is not necessary, but will pay where many hogs are handled.

Whether you attend public sales or buy at private treaty, it will pay you to keep every new hog in your quarantine pen for about a month before he is turned in with the home herd. On arrival of the new purchase, dip him with a fairly strong dip and, if possible, give him the feed he is accustomed to.

No matter how healthy the hog may have been, he may contract disease in transit. You may buy a hog in perfect health from a disease-free herd, and yet in a few days he may develop cholera or some other disease.

Careful breeders quarantine every hog they buy, and every hog they sell is dipped

TO HANDLE feeder lambs profitably takes not only considerable skill as a feeder, but also a keen analysis of market conditions. I have not been in the sheep business for several years, due to ill health, but believe there is something in my experience that might help some of the readers of FARM AND FIRESIDE who are thinking of feeding lambs. Market prices are much higher now than when I operated, but relatively they are so much the same that the same general principles apply now as did then.

I fed lambs six winters, and made money every year but one. That year the situation did not look good, so I only bought 900 head. The market went wrong and I fed from 90 to 120 days, thinking it would get better, which it didn't. Instead it got worse. In facing a loss it is always best to take it as quickly as possible and get the taste out of your mouth.

My best year I cleaned up \$7,209.65 in seven months with three bunches of lambs. I fed 95 tons of wheat screenings, 3,000 bushels of corn, 45 tons of hay, 6 barrels of salt, 3 tons of cottonseed meal, and 50 pounds of sulphur. The profit made on the different bunches of lambs was as follows:

Net profit of first 1,000 Mexican lambs (fall).....	\$1,153.00
Net profit on second 1,000 Mexican lambs (winter).....	2,986.95
Net profit on 800 Utah lambs (spring).....	1,946.70
Net profit on waste feed consumed.....	1,123.00
Gross profit for seven months' operations.....	\$7,209.65

Taking the last bunch of lambs I will describe my operations with them, as it is a typical example of what can be done with a lot of tick-infested lambs with proper care and handling:

About the fifteenth of March I bought 800 Utah lambs, averaging 60 pounds per head, and with extra good fleeces, at a cost of nine cents a pound. These lambs were warmed-over lambs; that is, lambs that had been bought by a feeder, taken out, and through bad weather conditions, shortage

of feed, or poor management had failed to fatten, but were in good strong flesh.

These lambs were put through the same course of feeding as with a lot fresh off the range, and as soon as they were on full feed they were immediately sheared. They yielded an average fleece of seven pounds per head. One fleece weighed 16 pounds. I found upon shearing these lambs that they were very ticky, and this no doubt accounts for their not having fattened in the previous feeder's hands.

As soon as the fleece was off, the ticks left the lambs, and the lambs commenced to gain rapidly. It is always the safest plan, however, to dip to remove ticks. I only lost six of these lambs, and they turned out a mighty fancy bunch of finished fat lambs by May 20th, going on the market and topping it at an average of 85 pounds. This shows a gain of practically 32 pounds, an increase of 12 pounds due to shearing, as I could not have hoped for more than 20 pounds' gain if I had left the wool on.

THESE lambs went on the market before the spring lambs had commenced to run freely, and after the fed lambs were practically all marketed—this being the best time to market lambs of this type. The weather being warm, nearly all wool sheep and lambs were killing dark. By that I mean, on account of the fleece the animal was overheated and the meat showed dark color, instead of its natural light color. For this reason the packers make a very short range between clipped and woolled stuff, and these lambs brought 9½ cents a pound. Here is a summary:

RECEIPTS

794 lambs, average 85 pounds, at 9½¢.....	\$6,411.55
5,538 pounds of wool at 30¢.....	1,667.40
6 dead lambs at \$3 per head.....	18.00
	\$8,096.95

EXPENSES

800 head, 60 pounds average, at 9¢.....	\$4,320.00
59 tons of grain at \$21.....	1,239.00
1 ton cottonseed meal.....	30.00
15 tons hay at \$18.....	270.00
60 days' labor.....	120.00
Insurance.....	10.00
60 days' interest.....	60.00
Gasoline and oil.....	6.50
Salt.....	4.00
Sulphur.....	.75
Marketing, yardage, commission, and driving.....	90.00
	6,150.25

Net profits on 800 lambs for 60 days.....	\$1,946.70
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With this band of lambs through remarkable gains and heavy shearing I was able to make a good profit even with only a margin of 50 cents per hundred between buying and selling prices. It usually requires a larger margin than this, and lambs only shear on an average about six pounds per head.

THE winter that I lost money I used 30 head of 70-pound pigs to eat the waste feed, and made \$100 on them, but lost \$217 on the 900 lambs. My net loss was \$117 and my time. The same year the big Colorado lamb feeders lost \$2 a head on 2,000,000 lambs, while my loss was only about 25 cents a head, so I figured that there was nothing wrong with my system. These market conditions arise frequently, and would not stop me from going ahead the next winter. In fact, it usually follows that, after all, feeders have had to take a severe loss, the following winter is a good time to feed, and the man who will take this opportunity usually recovers all the losses.

I never allowed high feed prices to stop me from feeding because a great many feeders balk at high feed prices, causing a shortage of lambs on feed and resulting in a high market when lambs are fat. I never bought feeding lambs higher than fat lambs were selling at the same time, and usually got them \$1 to \$2 lower than fat ones. If you can get this margin the gradual increase of fat lambs in price as the season advances will make you a good profit.

In the winter of 1917 and 1918 nearly all feeders lost money. When fat lambs were selling at 17 cents, feeders cost as high as 18½ cents, with the result that when they brought their lambs back to market they had to sell them at less money per pound than they had paid for them. This was the condition that prevailed the country over.

[CONTINUED ON PAGE 44]

Safeguarding Your Hogs

Ry R. B. Rushing

YOU can reduce your loss from cholera to a minimum by keeping your premises clean, by inoculating all hogs, and by putting all new hogs in quarantine as soon as they arrive on the farm, as Mr. Rushing suggests.

THE EDITOR.

before shipment. Dipping is practiced as much to prevent disease as to cure it. There are several dependable dips and disinfectants on the market. A supply of these should be constantly on hand. Not only should hogs be dipped with more or less regularity, depending on their condition, but their sleeping quarters and pens should be disinfected occasionally.

Dogs and other animals should be kept away. Cholera germs are often transplanted from one farm to another by cats, rabbits, and even by birds. In some places pigeons are a prolific source of cholera infection. These birds cover large

areas, feeding in the barn lots of farmers in widely separated regions. The hog man's antipathy to pigeons is therefore well founded. Use the shotgun on them if necessary, but be sure to keep them out of the hog lot.

Quarantine plants will pay the breeder well indirectly, for visitors noting such devices will be inspired with confidence in the owner's carefulness. You will find it easier to prove the health of your herd by showing a quarantine plant, sanitary houses, and modern appliances for the stock than by talking.

The cost of the quarantine plant need not exceed \$50 to \$100. Many plants have been established for half that amount, depending upon the class of materials used. The pen can be used for other purposes; but if there have been cholera hogs in it, disinfect before allowing other stock to use it.

Plow or disk up the soil in it each year, and sow to rye, rape, or some other forage crop. Do not allow a blue-grass sod to establish itself in the pen, as sod is a harbor for disease germs. A quarantine pen is one of the cheapest and best forms of insurance you can use.

Romance of the Red-White-and-Roans, for the Young Folks

By Daniel Lewis

DID you ever read about that queer place in England called Stonehenge? Charles Dickens tells about it in his "Child's History of England," and, if I remember correctly, Hardy describes it beautifully in "Tess of the d'Urbervilles." I believe that Tess slept on Stonehenge the night before her death.

Stonehenge was built as a kind of sun temple. But I do not suppose that you ever thought about what sort of cattle the people who built Stonehenge had. They probably were wild white cattle such as you may see in Chillingham Forest to-day. There were also red cattle in England then, and black cattle with horns.

From records in existence to-day we know that before our Declaration of Independence was written on this side of the ocean, to make us free from England, on the other side two Englishmen, one named William St. Quentin and the other Michael Dobinson, were going to Holland to buy bulls. These bulls belonged to what we to-day call the Holstein-Friesian breed.

About this time the farmers in northeastern England had two or three breeds which they liked best to turn their turnips and straw into roast beef. They were the Teeswater cattle, the Holderness cattle, and the Longhorn cattle. I suspect that it would not be greatly out of place to call the Teeswater and the Holderness the grandfathers of the Shorthorn, and the Longhorn the father. The Longhorn was just what its name indicates, a breed with long, drooping horns—big and thick-fleshed, but rather rough and gobby.

A man called Robert Bakewell had most to do with improving the Longhorn. He was a thoughtful tenant farmer who lived on a farm which he named Dishley Hall, in Leicestershire, where the Leicester sheep comes from. This Bakewell was a wonderful man, and I may have occasion to tell you more about him in connection with the Shire horse or Leicester sheep. For one thing, when one of his cows died he would cut her up to see how thick-fleshed she was, and perhaps put away a cut or two in "pickle" in his "museum." After many years, of course, he could go there and actually see whether he was improving the thickness or quality of the meat.

LIKE too many men of to-day, one John Hunter got tired of farming. He moved into the little town of Hurworth, on the Tees River, in the county of Durham, England, and became a bricklayer. He took the family cow along, and, having no pasture, she was tethered in the village lanes. In the same year when our Declaration of Independence was signed the old cow gave birth to a bull calf. Then both cow and calf were driven in to the Darlington market, and sold.

Six years later Charles Colling, who went to the Darlington market regularly, noticed that a lot of extra good veal calves came in from a certain neighborhood. He went out there, and found the bull which was the sire of these good calves. His brother, Robert Colling, and a neighbor finally bought the bull for \$50. He was a little

bull, but wonderfully thick-fleshed and extraordinary in the mellowness of his hide.

The Collings used him a little, but were afraid that he was too small, and sold him to Mr. Hubback. When his calves began to come on they saw, too late, that they had made a great mistake. Such cattle were never seen before as the old bull, the son of John Hunter's family cow, sired. In history he takes the name of his owner, Hubback. Practically every Shorthorn pedigree in

This Red-White-and-Roan seems to be quite popular with these young ladies who live on the same farm in Indiana



the world runs back to Hubback. He was the real founder of the Shorthorn breed. Thus frequently do great cattle, as well as great men, come from humble beginnings.

The Shorthorn is to-day the most popular breed of beef cattle in America. It is the oldest beef breed known to our farmers, too. Henry Clay, the "great compromiser" in your history books, brought over some of the first ones from England to Kentucky in 1817.

In color the Shorthorn is to-day red, white and roan. Sometimes, we call them the "red-white-and-roans" as a nickname. Any Shorthorn may be all red, or all white, or all roan, or a mixture of red and white.

At one time in this country there was a "color craze;" everybody wanted red Shorthorns, and would not have a white or

roan one, no matter how good they were. At sales they would pay a huge price for a red bull, while a better one in every respect would go begging just because he was white or roan. Of course, that was very foolish. We don't eat color. After a time the craze spent itself. Now the roan, if anything, is the most fashionable color in Shorthorns. And when you mate a white and a red Shorthorn together, the result is quite likely to be a roan calf. Men are not fool-

ish enough to breed cattle for color alone any more.

The Shorthorn is probably our largest beef animal, though you could not get a Hereford man to agree to that, because the biggest Herefords weigh just as much as the biggest Shorthorns. But I am speaking of averages. A Shorthorn cow will weigh from 1,400 pounds, at maturity, up to 2,000 pounds. When I was younger I worked as a

medium-sized farms. Shorthorn steers feed out quickly to heavy-weights. I have often thought that the breed was specially adapted to farmers where men bred and raised their own steers and fed them out at home, rather than shipping in feeder steers from Texas or Montana.

How long do you suppose that Shorthorn cattle have been known in America? Well, some of the purebreds of to-day can trace their ancestry back a deal farther than the men who own them. It was in 1793 when Gough & Miller landed the first Shorthorns on American shores. They brought them to Virginia. Those cattle came from England, the original home of the red-white-and-roan.

In the northeast corner of England are the counties of York and Durham. The River Tees divides them. They tell me that York is the largest county in all England. That Teeswater County is the cradle of the Shorthorn breed. North of the County of Durham lies Scotland, and when Shorthorns are brought over here to-day from Great Britain many of the best of them come from Scotland. It may be that some of you have heard your grandpa refer to Durham cattle. Of course he meant Shorthorns, but his use of the term "Durham" will only help to fix in your mind the place where the Shorthorn came from.

THE two brothers who have often been referred to as the real founders of the Shorthorn breed, were this same Charles and Robert Colling, mentioned a while ago, who lived not far from each other in Durham. Each was a good cattleman. Each had a fine herd of his own. They were shrewd farmers, and in selling their cattle to the little country butchers on the local market knew that they were too "wasty." They did not dress out high enough. As feeders they realized that the cattle would be more profitable to them if they would mature quicker and feed out better. They set out to get cattle more suited to their conditions. They were very fortunate in getting Hubback, and used him two seasons before selling him to Mr. Hubback.

One of Hubback's daughters produced a bull calf named Foljambe. Foljambe was used extensively in the Colling herd. One of his sons, Bolingbroke, was mated to one of his daughters, Phoenix. The result was a bull calf which Charles Colling named Favorite. That was in 1793. Now Favorite was mated back to his own mother, and the result was a heifer named Young Phoenix. Then he in turn was bred to Young Phoenix, his own daughter, and at the same time his mother's own daughter, therefore his half-sister. The result was a bull calf named Comet. Comet proved the greatest bull that ever stood on four legs up to that time.

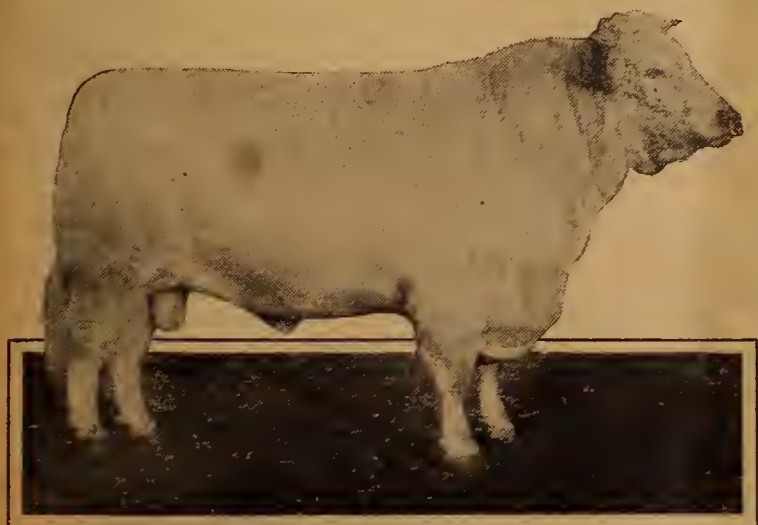
When Charles Colling dispersed his herd in 1810, Comet sold for \$5,000—an enormous price in that early day, though only a moderate one now. Comet sired the finest cattle ever seen, and if you trace almost any Shorthorn pedigree of to-day back far enough you'll find Comet. Just for the fun of it, suppose you try and write out Comet's pedigree. [CONTINUED ON PAGE 27]

THIS is the first of a series of stories by Mr. Lewis, which, when completed, will be published in book form under the title of "A Child's History of the Breeds." THE EDITOR.

The aged bull at the head of that herd was exceptionally large too. He weighed 2,700 pounds, but as a breeder he never amounted to much. A Shorthorn bull which does not weigh 1,800 to 2,000 pounds when mature is under size. In the show ring, size is very important.

In form the Shorthorn is characteristically square-lined. He should look like a great, big rectangular box set on four short legs, and with a short neck and a broad, stylish, short-nosed head to set him off. The Shorthorn's hind quarters are especially square, due to the long, level rump, deep twist, and full-meated thighs and quarters. Some of the old cows are inclined to pile up a lot of fat around the root of the tail, making them "patchy." Patchiness is discriminated against in the show ring, but does not often occur in the nice young show things.

The Shorthorn has been called "the farmer's cow." This is doubtless because the Shorthorn cows give more milk than the cows of any other beef breed. The breed does well on



This is Whitehall Sultan, now dead, who was the most famous American Shorthorn sire. He was owned by F. W. Harding, Waukesha, Wisconsin



Little Sweetheart, Grand Champion Shorthorn female at the 1919 International. She is owned by T. S. Glide, Davis, California

Are You Sure Your Child is Growing Up To Be Strong and Healthy?

By William R. P. Emerson, M. D.



A well-known physician discovered that his little daughter was malnourished. Cause was sought, and adhesions following diphtheria were found in the back of her nose. These were removed by a slight operation. The picture shows her happy after her first good gain

when a child's height and weight are constantly wrong it means faulty growth and imperfect development. Records of our examination of thousands of children of school and pre-school age show that from 20 to 40 per cent are habitually under weight for their height. This condition is found alike in the East Side of New York, among the well-to-do in Boston and Chicago, and with rich and poor in suburban towns of Massachusetts. It was also confirmed by the percentage of young men rejected in the draft as physically unfit.

It is to present a program to wipe out this discreditable condition, and to remove malnutrition from your children, that this series of articles is written.

THE best test of a child's condition is the relation between his height and weight. We have prepared tables giving in three columns the normal weight at various heights, and the figures for seven and ten per cent underweight. The line marking off sound condition from a state of health showing clear symptoms of malnutrition lies at seven per cent underweight for height.

There is a definite zone of health, outside which are, on the one hand, the comparatively few children who are obese or overweight, and on the other, those who are under weight and malnourished, which we have found to include the large percentage mentioned above.

In the case of these malnourished children, careful examination has brought out an average of more than five important physical defects, many of which are directly associated with malnutrition. As the child begins to gain and approach the normal weight line, it is interesting to watch the disappearance of some of these defects. They lose their pallor and the lines under the eyes, the muscles become firm and strong, posture is improved, shoulder blades and protruding abdomen are less prominent, and the whole effect is sometimes a transformation. At the same time the parents report that the patient has become "a different child." Where he has been irritable, forgetful, inattentive, losing his temper over trifles, a worry to himself and everyone else, he now gets on well with his associates and has some real enjoyment in life.

You as a farmer are always interested in a horse trade, and when a horse is brought out to be examined the boys gather to hear his "points" discussed, and learn to discover his defects. I remember seeing a horse driven up and down the street that I thought had fine style, a good gait, and all the appearance of a splendid animal.

THE care of infants up to two years of age has been well worked out, but when a child reaches the age of two he is expected to "go it alone."

This is a most important time for the child's nutrition and growth, yet very little teaching in these matters has been given. Food and health habits which affect the child's whole development are made at this period; yet during this change from infancy to adolescence he is left largely to his own devices, and it is a hit and miss chance whether he will come through with average success.

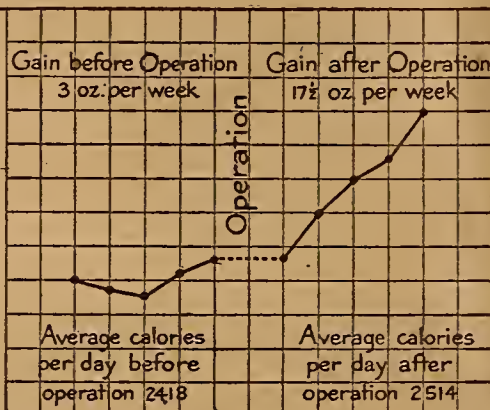
There are certain relationships between a child's height and weight that are of great importance, and

So when asked what I thought he was worth I named a high price. A more experienced observer then told me he was worth only half that amount, and pointed out that he traveled with his mouth open and his tongue out—defects which, unnoticed, would cost the purchaser real loss. A horse trade is really a game of wits, and the farmer has found that it pays to know the points of a good animal.

NOTE: The series of articles by Dr. Emerson, of which this is the first, give to the readers of FARM AND FIRESIDE the remarkable results of experiments with malnourished children extending over several years. All the directions given in the articles are based on the study of children themselves, rather than on theories emanating from behind desks. "The first thing I had to do," writes Dr. Emerson in a letter to the Editor, "was to disabuse my mind of preconceived ideas, and also of ideas that are generally accepted. Then I was able to learn the essentials of health, which, it has been shown, can be obtained in practically all circumstances and among all nationalities. I went to a child-helping institution to see what we could do there, and selected from a group of 600 children all the worst cases. I found that we could get all these cases well. I worked in the out-patient departments of hospitals, both large and small, and in a war year. I went to the East Side of New York (its poorest district), and proved that it was possible to get these children well in their own homes, in spite of war prices of food. Here we were able to get the whole group not only to come up to the gain of normal children, but to exceed it by 50 per cent, and in certain groups where circumstances were more favorable we secured more than 150 per cent above the expected gain."

The mothers who read this magazine are exceedingly fortunate in being able to apply in their own homes the principles established by Dr. Emerson in bringing up to normal the boys and girls who are under weight, and thus retarded in their mental and physical development.

THE EDITOR.



This chart shows the average gain of a group of children after an operation for adenoids and tonsils, as compared with their gain before the operation: in the one case three ounces a week, in the other seventeen ounces, with practically the same amount of food

The problem of the malnourished child in the average home can best be presented by a series of questions similar to those which you would ask yourself regarding any growing animal:

Is my boy or girl growing properly?

What are the proper standards for measuring growth?

Is my child up to the proper weight for his height?

Is he free from physical defects that interfere with

his proper growth?

Are his food and health habits conducive to proper nutrition?

Is his physical development as near to standard as it should be?

Does he show ability to think and plan for himself according to the standards of his age, or is he forgetful, backward, nervous, "finicky?"

If he is not what you think he ought to be, do not blame him or call him a numskull, for there is always a cause for his condition. As a parent you have no more important job than to find out this cause and remove it.

The best time to start on the new program is at night, when both parents can be present, and when the child can most easily be examined without clothing. A man who judges animals knows how much

would be hidden if the animal were inspected when covered with a blanket. Yet this is the usual way in which children are examined by a school physician, and many a child with a round, attractive face passes as well nourished when an examination without clothing would reveal physical defects.

The child should be weighed about the same hour each week, if possible without clothing, but in any case under the same conditions, so that a consistent record may be made. A convenient method is to take the weight without shoes but with ordinary indoor clothing. If the shoes cannot be removed, weigh them separately, or make an estimated allowance of one and a half pounds.

WHEN it comes to measuring, have the child stand against the wall, heels together and against the baseboard. Place a book edgewise on his head and against the wall to determine the point from which to begin the measurement. Take a tape measure and read the height in inches.

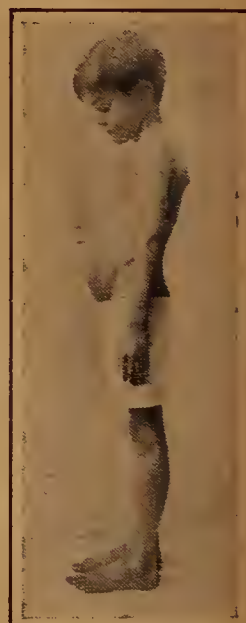
Now, when you have the weight in pounds and the height in inches, consult the table printed with this article. (See page 37.) Be sure to get the table for the right sex, and look down the line of heights until you find the number of inches corresponding to the measurement of your child. The next column will give you the average weight for that height.

Compare this figure with the weight of your child. If the latter figure is the same or larger, your child belongs to the fortunate two thirds who are up to or over the standard weight line. You will notice that the next two columns give the figures for seven per cent and ten per cent underweight.

Thus, the table shows that the average weight of girls 54 inches in height is 70.3 pounds. If a girl of this height weighs 65.4 pounds, she is seven per cent under weight for her height, and must gain five pounds before she can pass her normal weight line. If she weighs 63.3 pounds, she is 10 per cent below the standard, and has seven pounds to gain.

Remember that these tables are made from the measurements of tens of thousands of children, including those below the standard. The averages are therefore low, and the figures very conservative.

If you find that the weight of your child is habitually seven per cent below the average, he is retarded in growth at least a year. This is a serious condition which merits prompt attention. In fact, we advise you to [CONTINUED ON PAGE 37]



Herbert, eight pounds (15 per cent) under weight for his height, and nearly two years retarded in growth. Notice his round shoulders, protruding shoulder blades, and prominent abdomen, his thin arms and legs, his fatigue posture, due to weak muscles

Outline of the Program

THE undernourished child should have:

- Regular lunches daily at 10:30 A. M. and 3:30 P. M.
- Regular daily rest periods, lying flat without pillow.
- Limited exercise. Twelve to fourteen hours sleep a day.
- No music or extra studies outside school hours.
- Sufficient nourishment and proper habits of eating.
- Interest your boys and girls in their health. Tell them they should be willing to train for health as they would train for athletics.

Weigh them at the same hour weekly. This will interest them. A special weight chart, 16 by 21 inches, suitable for hanging on the wall, can be supplied by FARM AND FIRESIDE.

If they do not make a satisfactory gain, write to Dr. Emerson, in care of FARM AND FIRESIDE. Tell him your child's age, weight, and height; what you know about the difficulty, and how you have tried to meet it.

Later articles will give further details of the health program.

The Weight Chart and History and Physical Examination Form will both be sent on receipt of 20 cents in stamps; or either will be supplied for 10 cents.



These pictures are of brothers, Paul and Ralph. Paul is eight years of age, and weighs 33 pounds; Ralph is three, but weighs 29 pounds—a difference of five years in their ages, but only four pounds in their weights. Paul is stunted both in height and in weight, because of improper food habits. On investigation it was found he was taking less food than that required by an infant of one year. His mother said: "He does not like milk, bread, butter, fish, or meat. He sits down at the table, looks and fools around, but will not eat. He washes his food down with what he drinks." Notice



Paul's unhappy expression, his thin arms and legs, and his round shoulders. His muscles are weak and flabby, he tires easily, and his mother says he is "irritable and cranky." Ralph, on the other hand, is strong, good-natured, and happy.

The Outposts of an Army of Service

SCATTERED throughout America, in cities, towns and hamlets, are thousands of Goodyear Service Station Dealers instructed in this Company's policy.

That policy includes the building of a quality tire, its convenient distribution, and delivery to the user of all the mileage it originally contained.

An army of competent workmen, reinforced by finest manufacturing equipment, discharges faithfully the first part of this policy by building a superior product.

Through Goodyear Service Station Dealers, conveniently located throughout the nation, the remaining two factors of our policy are carried into effect.

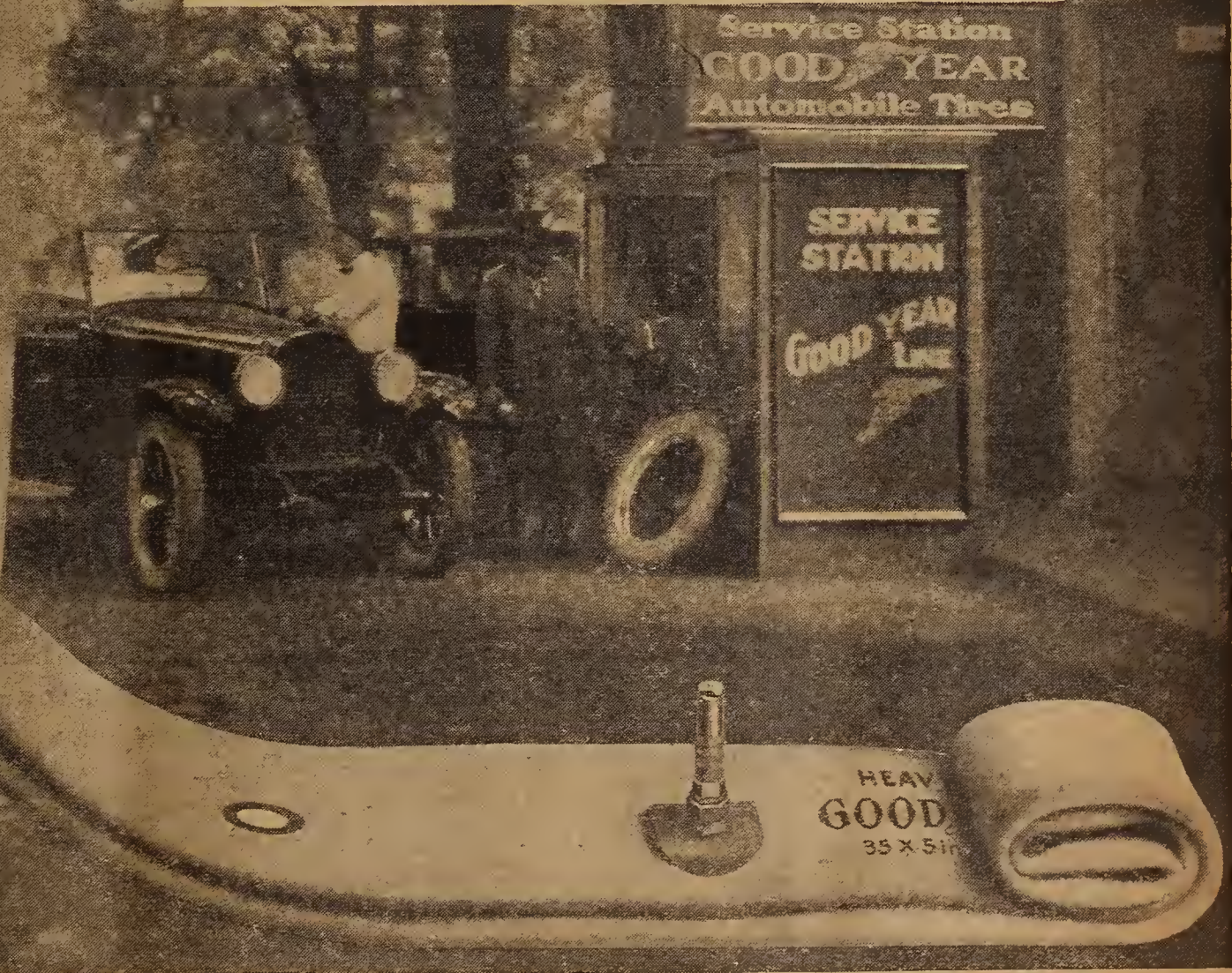
Good as are Goodyear Cord Tires, much of the renown arisen from their performance, is due to the work of our dealers in giving these tires proper care.

Not faultless design alone, nor the most rugged construction, can unaided insure those remarkable Goodyear Cord mileages that protect our good name.

Give the Goodyear Cord Tires you buy, the benefit of Goodyear Service Station attention; accept the inspection, advice and lessons on tire care available there.

Because Goodyear Tires and the sincere conservation service behind them afford uncommon satisfaction, more people ride on Goodyear Tires than on any other kind.

THE GOODYEAR TIRE & RUBBER COMPANY
Offices Throughout the World



This is an actual photograph, taken in Fairbury, Ill., of a representative Goodyear Service Station

Copyright 1920, by The Goodyear Tire & Rubber Co.

GOODYEAR CORD TIRES

The Rosary of Mr. Nimrod Briggs

It prompted him to play the good Samaritan to the little Robbins family

By William Dudley Pelley

Illustrated by C. A. Federer

IF YOU are one of those rare souls who find delight in the study of your fellow man, live and work a while in the office of a little country newspaper. For in the office of a little country paper in a typical American small town you will get down to the hardpan and the bed rock of human nature. All day long through the front office will filter the pathos and bathos of the lives of your kind in the form of news for your columns—births and marriages and deaths, inspiring stories of success and heartrending stories of failure, cheap snobbery, noble aspiration, unrequited sacrifice; and in the back room you will find the printer folk, perhaps not so picturesque as they were a generation ago, but still very humanly interesting, and each man and each woman with a story.

Quaint characters they were—those men who worked on newspapers in the old days. From place to place they wandered, semi-respectable vagabonds, covering a regular route across the country, working only when their money gave out, laboring long enough to gain the wherewithal to carry them on to the next job, always certain to put in appearance when an extra hand was needed, equally certain to answer the wanderlust and take the trail again when it was suicidal to the office organization to lose them.

They were fairly well educated, because the nature of their business made them so. But drink and misfortune had done its worst for many of them. They were strange, lovable souls, out of plumb with the world around them, asking only that it provide them what precarious living it was necessary to earn to keep out of the toils of the authorities, and that they be allowed to live their lives in their own unconventional way. Before we installed our linotypes in the office of our little local paper, we knew many of them.

One of these was Mr. Nimrod Briggs, the man who was always going to "make a trip around the world some time," who came to us one warm, slushy winter noon-time back in the nineties. He was a seedy little man, as bald as an egg, and he "shook, when he laughed, like a bowlful of jelly." Only, Mr. Nimrod Briggs rarely laughed. All these years he has remained a sorrowful-faced mystery—grave, silent, patient, hard-working, yet withal a mystery.

OUR foreman smiled when Nimrod Briggs told us his name. Somehow, we had always associated the appellation with that mighty hunter before the Lord—swift, agile, dexterous. Here was a stout little man of sad countenance, named Nimrod. We took a couple of looks at his build, at the sag of his trousers, both front and rear, at the faded green coat, at the steel spectacles worn halfway down his bulbous nose, and a mighty merriment ensued in our office.

What his history had been prior to his advent among us, we have only lately learned. But this thing is certain: tramp printer though he had been, he became a fixture in our office.

A fixture in our office indeed! It was in the late nineties that he came to us; we know, because the husband of Mrs. Mathers, who keeps the boarding house on School Street, was killed in the Spanish War. His widow opened her establishment to support herself, and Nimrod was her first boarder. He has made his home with her ever since.

Strange as it may appear, this patient, plodding, kindly old work-horse had an ambition. We heard it first the week he came among us. The day's work at last brought to a close, Nimrod laid down his pipe and removed his spectacles. He leaned against the ad stone and a faraway look came into his eyes.

"Well," said he, "this looks like a good office and a good job; I guess I'll stick. But, all the same, some day I'm going to take a trip around the world!"

How many, many times we have heard that familiar declaration from the pursed, withered lips of Mr. Nimrod Briggs. He said it in 1898; he said it in 1908; he said it in 1912. But something seemed to prevent him from realizing that great ambition—and it was money. He was saving his money until he could take the trip like a lord. When the World War broke out in 1914, he still lacked the necessary funds, although his account in Judge Farmer's bank was commendable. As the war went drearily on, he finally augmented his familiar prognostication with the observation: "And yet, to think things is going to



The boy lay on the sheetless bed . . . his eyes were hard and glassy

be all knocked to hell over there before I can get around to see 'em!"

A real, dyed-in-the-wool tramp printer in these electric days of linotype machines and web presses is a curiosity. Yet one day last spring we returned from dinner to find waiting around our office a young man who looked as if he had been up against all the brands of hard luck that had been let loose on the world since Pandora.

There was something about the Robbins boy's face we could never quite get over. It was a pitiful face. Aside from the lines of anxiety and hard luck, the right eye was white—going bad from cataract, if he were not half-blind already. The lad's clothes looked as if they had been slept in for a thousand nights; he needed shaving titanicly; his hair was unkempt.

His age couldn't have been twenty; his face was that of an old and life-weary man.

"Say, now, please can I have work?" he stammered to Sam Hod, our editor-owner. "I'll do anything if you'll pay me money. Please can I have work?"

Sam looked the boy over keenly. Drink wasn't responsible for his condition. There were no traces of that curse upon him.

"Where are you from?" asked the editor.

"I, now, come from Maryland," the lad replied. "I been working on and off, everywhere. But, now, I'll work faithful; I promise you I will. I'll try my hardest to stick to a steady job."

Sam withdrew and said to Fred Babcock, the Paris real-estate man, who was in the office to advertise for a couple of lost keys:

"Something wrong with that boy, Fred; a screw loose somewhere. He doesn't look like a booze fighter. Yet a lad of his age

and stamp ought not to be floating around up here so far from home looking for a job. And to refuse him," he went on, "somehow falls in the same category with assaulting a child or kicking the crutches from under a cripple."

The editor was puzzled. That meant he was interested.

"Do you know the printer's trade? Can you set ads?"

"Yes, sir," responded the boy eagerly.

"All right; we'll see. Take him into the back room, Jim. Turn him over to Mr. Nimrod Briggs."

"And, now, the wages," asked the boy—"how much money can you let me have?"

"Six dollars a week ought to be pretty good pay for a lad of your years, not worth much more than an apprentice—"

THE disappointment on the lad's wan features was pathetic.

"You, now, couldn't make it ten?"

"Why!" exclaimed Sam. "I can get all the boys I want of your age for six dollars a week to start. Why do you want ten?"

"I, now—well, never mind! I'd rather have six than nothing. But if I work hard I wish you'd make it ten."

"We'll see how swift you are," said Sam; "then we'll know how much you're worth."

Here's this 'Lost' ad for the classified column that Mr. Babcock's just brought in. Take it along with those others. Nimrod Briggs will show you the case of six-point. Tell him I said to put you on setting the classified ads for to-day's paper."

The boy went out, was shown where to hang his hat and coat, duly presented to Mr. Briggs, and loaned one of Nimrod's black aprons. He climbed on to a stool

and started setting the "classified" from the case of nonpareil—the daily job that every compositor in the office avoided if he could. It was only a little four-line advertisement saying that Fred Babcock had lost a key ring that forenoon which contained two keys and a metal tag marked L. C. Stevens. But he was all the rest of the afternoon till press time setting it and a couple of others.

That afternoon, while the last forms were being locked and we were standing around as per custom, watching the paper go to press, he said to Mr. Briggs:

"About that first ad I set—the lost keys. How does it happen, I wonder, that a man named Babcock is advertising for keys marked Stevens?"

"They probably belong to the old Stevens property out on the North Foxboro road," replied Nimrod. "Fred is caretaker for the property, winters. The Stevenses go to New York durin' snow time."

"And leave it furnished?"

"Yes," said Nimrod Briggs. He said it rather impatiently. His attention was focused on lifting an old clothing store ad that refused to lift. If he had not been so occupied he might have thought it queer that the new boy should make such an inquiry.

That night, as we were washing up around the sink, the pressman asked him:

"Where you living?"

"Nowhere—yet!" replied the boy.

"Come with me over to Mrs. Mathers'—she'll take you in," said Nimrod Briggs.

"The paper's got an arrangement with her to board its help the first week they're in town, anyhow. If they don't have the price, the widow takes it out in advertising. Didn't Sam Hod tell you?"

IT WAS Friday morning that "Blink" Robbins—as the boys called him because of the way he blinked his eyelids in a pitiful attempt to see his way—started his try-out. Keeping an eye on Robbins' work, we finally had to admit that, while it was cruel, all the same he was impossible. It was cruel because he was trying so desperately to make good. He was impossible because, despite his endeavor and the low wages, he was more of a hindrance in the ad alley than he was a help. He couldn't see to do his work. He had to hunt the copy and his type case over with his good eye, and that took time, time all out of proportion to the amount of advertising he set.

While we were making up our minds what course to pursue, in justice to him as well as to ourselves, the Robbins boy's face deepened in its tragedy. His fear of losing his job was so vital that it made him do things that were just the opposite of what he should have done to hold our confidence. If we told him to hurry with an ad near press time, he was almost sure to pi it, or else the thing wouldn't lift after it was set.

So the second Saturday afternoon, as kindly as we could, we called him to one side; gave him his six dollars, and said:

"Suppose, sonny, you sort of take your time and look around. See if you can't connect up with something else to do—"

"You mean, now, that I'm fired?" he asked.

"Well, not exactly fired—yet. You can stay around here and work for a time until you find something else, if you won't be too long about getting it."

He worked the next week, blindly, spiritlessly, stupidly. He was such a nuisance around the office that we contemplated giving him twelve or fifteen dollars and telling him to pull his freight—anywhere—so long as he got from underfoot. Meeting Mrs. Mathers on the street, Sam told her he did not intend to be responsible for the boy's board after Saturday.

"Why," exclaimed Mrs. Mathers, "he only stayed that first week with me. He seemed to think four dollars was too much for board. I don't know where he went or where he's living."

Wednesday, Thursday, Friday, dragged away. Saturday came. The office girl figured in his six dollars into the pay roll, drew a check for the ninety-odd dollars to cover the whole, cashed it at Judge Farmer's bank, and left the money in the green box safe while she went to dinner.

When she came back the money drawer was blank empty—empty to the last bent cent. The lock on it had always been faulty. It was an office joke that our old box safe could be opened with a jackknife or a hatpin.

The Robbins boy did not come back after dinner.

Chief Hogan was [CONTINUED ON PAGE 38]

IT is not strange that so many families should believe the Hupmobile to be the best car of its class in the world.

The fact is, that this car renders such long-continued service, at such slight cost, that this world-wide conviction was bound to come.

Almost any Hupmobile owner will tell you, if asked, how useful his car is to all the members of his family, and how it is literally counted on to save time, inconvenience, and actual expense.

"How I Kept My Boy on the Farm"

Prize Letters by Readers of Farm and Fireside

First Prize

Winner: B. L. Williams
Bakersfield, California

MY FATHER was a farmer before me. He belonged to the old school, believing the child owes everything to his parents. So we four boys were made to work on the farm, receiving only our clothes, board, and a grammar-school education in return.

The three older boys left the farm, as soon as they were old enough, to obtain outside work. However, I remained, not by any inducement, but because I loved farming. I determined then, though, that if ever I had a son of my own that he was going to get something in return for his labor besides his clothes, board, and education.

I borrowed money and bought a farm, was married, and in due time my son arrived. At an early age I gave him a heifer calf for the raising, he to keep the heifer calves and I was to have the steers. That calf must have been partial to the boy, for her first four calves were heifers. He also had an interest in the hogs, receiving so many of the increase for feeding them, and when marketing time came he received his share of the money from the hogs.

I taught him the value of a dollar and the use of it. He banked all his savings, as I promised him that when he had a certain amount I would sell him an interest in the farm. When he was sixteen years old he had enough saved to buy a fifth interest, and every year since he has taken out more shares in it, until now we are joint owners.

His pleasures were never denied him, he always had pocket money. He has a high-school education, and intends to enter Davis College this year. He is now perfectly content to stay on the farm, as there is where his interests are. We also have our farm equipped with modern machinery and all conveniences.

Second Prize

Winner: I. Laznicka
Bellingham, Washington

THE problem of holding my son on the farm came when Dick, a boy of sixteen, fled to a nearby city to work in a machine shop. He fled because in the city, working on a salary basis, he was a free man, his time was his own, he could make of himself what he wanted to, he had a chance to develop himself along lines he was interested in, while in working for me he found himself narrowed to my standards, oppressed with the fact that his development was being crushed to nothing by my insistence on having things done my way, probably the way of olden times, the way I thought best because I had old-fashioned ideas about the farm and the farm equipment.

This was told me all in one breath, when, having scoured the city, I finally found Dick and forcibly brought him back home to the farm. The little rebel poured out his accusations all the way home on the train, and, though at the time, hot with anger, I denied the facts he put before me, I hadn't narrowed to such a centered-around-myself life that I didn't realize the truth in all he said.

At first I thought of giving Dick the

farm outright; but, as there was another son to think of, a boy just in his twelfth year, I decided that from then on Dick would be a salaried man with me, and that gradually I would let him work into the place the ideas he had along farm lines and farm implements. I would make the farm so interesting, give him such a grip on it, that Dick wouldn't ever flee from home again, and I must say I have succeeded wonderfully well in doing so.

When Dick reached his twenty-first birthday, I rented the farm to him at a certain sum a year. George, his brother, became his employee, and I went into the cattle-dealing business, and so it has been ever since.

Dick's not been like his father, I'll admit; for, though he pays George a liberal salary, in justice to the lad, he also gives him a certain percentage of the sum the crops yield each year, and off and on, as an encouragement, he'll give George a little calf or a number of baby pigs for George to raise as his very own. I guess my narrowness taught him the lesson of making farm life so interesting for George that he won't ever even dream of the city and its allurements.

Third Prize

Winner: H. E. Alcorn
Haskins, Oregon

MY BOY was my pal from the moment when I heard his first little wail on a chilly January morning. Right then I began to dream dreams of an ideal comradeship, which I am sure became a reality.

When he donned his first pair of overalls, turned up at least six inches at the bottom, and his "reg'lar" straw hat, we became partners, and that relationship still exists.

In plowing time he would trudge along bravely, holding to the plow handle. When his little legs were tired, he rolled over on my old coat in the shade and slept. It was his special delight to ride on the harrow, crowing and clapping his hands. I let him think he was indispensable to me, and he soon became so.

We both loved horses, and he helped me keep them in trim. He was as proud of their shining sides and well-kept mane as I, and often, on Sunday morning, he would say, "Dad, our team was the best-looking team in the churchyard."

When he was ten I gave him an orphan lamb; later on he claimed a pig, and finally a Jersey heifer. From his profits he built up a bank account of his own. He was now a real help to me, often advising me of recent improvements he had read about in the farm papers, all of which we considered together in a businesslike way.

But farming was not all drudgery. I let him see that. While we took advantage of rainy days to mend fences or fix up the machinery, we usually took some time off to fish or hunt, or perhaps go to the store. On Sundays we tramped the hills with the rest of my Sunday-school class. We formed a nature club, and learned the habits of every bird and beast.

I did not monopolize him, though. Often a chum or two joined us during harvest, and his "bunch" enjoyed many a picnic on the river.

In the fall after his graduation from high school, he came to me with a catalogue in his hand to help him outline his course in agricultural college. [CONTINUED ON PAGE 45]



Prairie Dogs

My Visit to a Prairie-Dog Town

Drawings and story by J. Clinton Shepherd

THE sun was just peeping over the eastern horizon when I started back to my cabin on the North Fork after a week spent at the Lazy YX Ranch, where I had been helping with the fall roundup. I anticipated a hot, tiresome ride through a section of uninteresting prairie, and so urged my pony into the steady, almost tireless fox-trot that is a marvelous trait in Western horses. Settling myself comfortably in the saddle, I prepared to make an uninterrupted trip back to my cabin.

One week before, I had left my dog in the care of a mountaineer. While I was enjoying in anticipation his delight at my return, a barking noise to my right startled me. I turned in the saddle, half expecting to see Rip beside me. Then, realizing that the noise came from a prairie-dog town a few hundred feet away, I laughed at the train of thought that a very slight similarity in sounds had started.

The entire population of the town seemed to be out, all bent upon errands the reasons for which I have never been able to discover. When they saw me, the ones nearest me started a whistling or trilling sound, apparently the danger signal in prairie-dog language. All immediately scampered to their holes.

I stopped my horse and waited for them to reappear, knowing that their curiosity would soon bring them out. When frightened, they seldom retire to the innermost chambers of their burrows, but remain in the little listening posts just below the entrances. From these points of vantage they can hear without being observed by an approaching enemy.

It was not long until they came out and, seeing me, began to clamor at my intrusion. They barked and chattered incessantly, each trying to outdo the others; they thumped their short black-tipped tails up and down with trip-hammer speed; they dived into their holes, and immediately came out to take another look at me; in fact, they worked themselves into a frenzy of excitement. However, when I made no move to harm them, they gradually quieted down.

As far as I could discern, they didn't seem to be working at definite things; yet they were tremendously busy. I did not see one of them in search of food; still they were all sleek and fat and apparently well fed. Where prickly pear, cactus, sage brush, greasewood, and bunch grass are the only things that could furnish sustenance to a colony of prairie dogs, it is surprising that they can subsist at all. They require no water, often living in arid land; and appearances would indicate that they require very little food.

A prairie-dog town is, nevertheless, evidence that prairie dogs are not indolent. The lawns are kept mowed around each home. There are probably two reasons for this: a better view of approaching enemies, and the use of the grass in making beds, nests, and lining for the innermost chambers of their burrows. Also, the conical walls of dirt thrown up around each hole are kept neat, and are repaired as soon as possible if they happen to be damaged by cattle or horses. These walls serve as watch towers and, in sections where there is rainfall, as dikes to prevent water from pouring into the burrows.

The hundreds of burrows—sometimes thousands—in a prairie-dog town represent a vast amount of labor. Each one is a labyrinth of channels, sometimes running to twelve or fifteen feet below the surface of the ground; and each home has from two to a dozen or more inhabitants.

The supposition that owls and snakes live in the same burrows is a popular fallacy. Both are as much the enemies of prairie dogs as are wolves, coyotes, badgers, and birds of prey. There are isolated instances where owls and snakes live in prairie-dog towns, but they occupy deserted burrows and prey upon young prairie dogs.

I wanted to study the anatomy of a prairie dog, to see wherein it differed from other marmots. For that reason I got down from my horse, took a rifle from its saddle holster, and fired at one, hoping that I should only wound it. It dropped, and I ran over to get it. But I was too late. On the instant that it dropped, two or three others ran out from their little watch towers and dragged it to the nearest hole. Prairie dogs will almost invariably risk their lives to help a wounded brother. That is a peculiar and laudable trait not common in others of the smaller mammals.

Since all the prairie dogs had disappeared into their burrows, I mounted my horse and continued on my way. I had not gone far, however, when they began to pour out of their holes and to set up a wild tumult. And even if I were able to interpret the epithets that were hurled after me, I would probably not be able to put them into print.

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It's the Field-Selected Ears That Boost Your Corn Yields

By L. E. Call

YOU can make good money selecting your seed corn in the field.

A very successful Indiana corn grower told me that he attributed his success as a grower of corn to the fact that he made a practice of carefully selecting his seed each season in the field. He makes a business of seed-selecting, and devotes more time and thought to it than to any other operation in growing the crop.

A little thought will convince any intelligent corn grower that the best seed can be secured only by field selection. In no other way can the grower know the character of the stalk upon which the ear was produced. Seed of strong vitality, that will germinate quickly and make a vigorous early growth, even though the weather is slightly unfavorable, is absolutely necessary if you are to obtain a good stand of corn.

Do not underestimate the value of good seed.

Since one bushel of corn will plant from 6 to 12 acres of land which will produce from 300 to 800 bushels of grain, it is apparent that the character of the seed planted is of the greatest importance. You are warranted in spending all the time and trouble necessary to insure the best possible seed.

Good farmers have found that the best way to secure good seed is to select in the field. After your corn is mature, and before the crop is harvested and shocked, go through your field with a sack or basket and select good-looking mature ears that are growing on thrifty-looking stalks.

The character of the stalk upon which the corn was produced is of as much importance as the ear itself. They should be strong, upright and leafy, of medium height, and largest at the ground, gradually tapering to the tassel. The ears should be located on the stalk at a convenient height for husking. By selecting each season stalks with ears at this height, it is possible gradually to develop a strain of corn that will be very uniform in this respect.

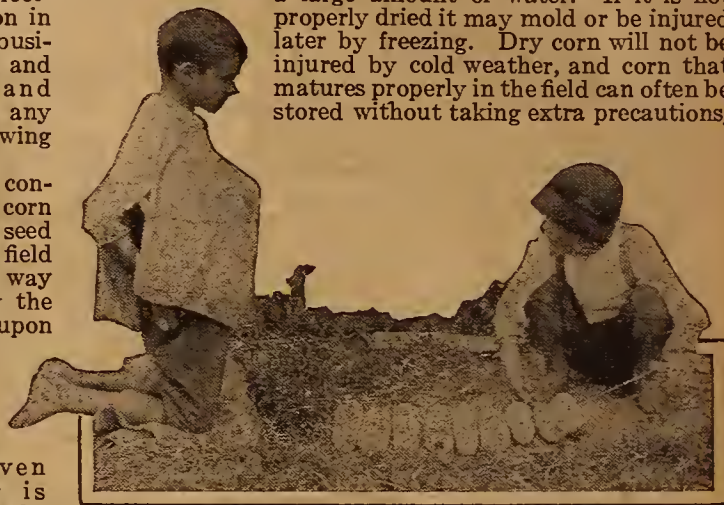
I find it best to select ears that have a shank of medium length and diameter, and which hang down sufficiently to prevent water from entering the tip. Make sure that the stalk selected grew under average field conditions—that is, where the stand was normal and where there were no special advantages of moisture and plant food. The ear selected should be good because of the vigorous breeding of the parent plant rather than from any advantage it may have had over other plants in the way of location. Do not select ears that are too large or too immature. Average-size ears are most desirable for seed. Strong, symmetrically developed ears, with straight even rows and well-dented kernels, will give the best results in good corn growing regions. Seed ears should be a little rougher than the average, because of the tendency for a variety gradually to become smoother and the kernels shallower. In the drier parts of the corn belt a smoother type of ear has been found more hardy than the rougher types.

REMEMBER, in selecting seed corn, that the ability of the corn to grow will depend largely upon the conditions under which it matured. If for any reason the ear failed to mature properly, the vitality of the seed is very likely to be deficient, and a poor stand of corn may result. A sound, firm condition of the ear and bright glossy grains are the best indications of proper maturity. If the ear is not firm, if the kernels are lacking in luster, or if the grains are more or less discolored at the tip end, do not select it for seed. These signs indicate poor vitality. Ears of this kind will not yield as well as those that are well matured.

It is a good idea to select two or three times as many ears as will be needed for planting. It may be advisable to discard many of the field-selected ears when they are more carefully examined. If an abun-

dance of seed is selected, only the best need be used.

After your seed is selected, be sure that it is thoroughly dried and properly stored. Corn gathered in the field always contains a large amount of water. If it is not properly dried it may mold or be injured later by freezing. Dry corn will not be injured by cold weather, and corn that matures properly in the field can often be stored without taking extra precautions,



These two corn-club boys have picked their seed corn in the field and are stringing it up so that it can be dried properly. They are overlooking no detail that might help them win the contest next year

especially in the South Central States.

But if the corn matures late and contains considerable moisture when the first frost occurs it will be necessary to dry it by artificial heat in order to obtain seed of the best quality. In the Northern States it is always the safest plan to dry carefully the seed corn each season. If you do not have a regular corn-drying room you can use the kitchen, the attic, or some other warm, well-ventilated place. When the corn is thoroughly dry, it can be transferred to a more convenient place for winter storage.

If for any reason you are unable to select your corn from the standing stalk before harvest, the next best time is when the crop is husked. A box for seed ears can be attached to the side of the wagon. In this way they can be kept separated from the other corn.

Even though you select your seed corn in the field, and store it carefully, do not fail to make a germination test before planting the next spring, if you want the best results. Corn properly selected and stored will probably grow, but it doesn't pay to take chances. The germination test before planting will insure a good stand.

How Much Did Your County Agent Save You?

THIRTY counties in South Dakota made an average net saving of \$26,475 each through the work of county agents during 1919, according to the report of I. B. Johnson, state leader of county agents.

Following are some of the things done by the agents during the year, as shown on his report:

They made 14,000 business visits to farms, addressed 1,433 meetings having a total attendance of 55,460 persons, and organized eighty marketing associations or farmers' exchanges which did a business of \$1,635,766.

They secured 4,300 registered sires, started 82 stock breeders' associations; organized 27 cow-testing associations, and forwarded an animal disease prevention campaign involving more than 122,000 animals.

In their "off" moments they received more than 48,000 office calls, wrote 4,500 farm articles for publication, answered over 50,000 letters, and mailed out 248,694 circulars to farm-bureau members.

Besides doing all these things, they seemed to have time to push many other projects to further production. And yet there are some folks who still think the county agent is a man who draws a salary for doing nothing.

The Federal Department of Agriculture is advising farmers to get back to clover. This advice is for the sake of the land which was kept busy producing wheat in war times.

A big-scale road test on 3,200 tubes



*How Firestone puts the miles in—and
then proves it—not at YOUR expense*

No other tubes in the world are road tested on so big a scale as Firestones. The Yellow Cab Company of Chicago uses Firestone Tubes exclusively on its 800 taxicabs. The service of these tubes is checked constantly—improvements and developments are arrived at.

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Firestone puts the best in materials into tubes by establishing purchasing experts at Singapore, center of the world's rubber market. Firestone puts the best in workmanship into tubes by organizing the crack

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And then subjects the finished product to this big-scale road test—in order to get you more for your tube money and most miles out of your tires.

Firestone Tubes resist heat—which everyone knows is the tubes' worst enemy. Their laminated construction, ply on ply of thin rubber sheets laid crosswise and perfectly vulcanized, gives the stoutest tube wall. Their larger sectional size means less stretch to fill the casing. Ask your dealer for Firestone Tubes. They cost no more than the ordinary kind.

*30x3½ Red, \$4.50; Gray, \$3.75
Other sizes in proportion*

Firestone



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"I'll tell you, Elmer — just finished my little old last year's car with Effecto and she looks so good, I'm going to send a picture of her to my wife's folks."

You may not send 'em a photo, if you use Effecto on your car, but you'll feel like it! You'll be so proud that you'll feel like driving the old boat "back home," just to show 'em you've got some car!

A few hours of interesting work, two or three dollars' worth of Effecto and 24 to 48 hours for drying will transform the old car into a mirror-like, new-looking automobile. Effecto slips off the brush so smoothly, that it levels itself, without brush marks or laps.

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World Crops—And Your Farm

[CONTINUED FROM PAGE 5]

Federation is working toward right now —EDITOR.]

Lubin saw in organization that which would give the farmer the knowledge he must have to enable him to be not only the producer but likewise the merchant of his own products, the only means for effectually fighting trusts in farm products. He was profoundly convinced of the futility of resorting merely to repressive legislation in such matters. Trade, like water, will find its own level, do what you may to prevent it; and so long as the producer's ignorance of conditions prevents him from having a voice in the marketing of his own products, so long will the opportunity create the speculator, the monopolist, the trust, the corner in farm products.

This was the thing he worked hard to show America, spending freely from his own means in sending out documents by the tens of thousands, in traveling long distances, in spite of advancing years and failing health, to address meetings and conventions, in preaching in season and out of season, often to unwilling ears, in the Administration and in Congress.

He believed that not only the prosperity of the American farmer but the very life of American democracy was involved in the solution of this problem on which depends the possibility for the independent landowning farmer to hold his own in the body politic; and in this landowning farmer Lubin saw nature's conservative, and the essential bulwark of a free democracy.

Always working on the question of distributing, Lubin, during a long stay he made in the United States in 1915-16, worked out a mode for utilizing the parcel-post service for securing direct dealing between farm producer and city consumer. The space at my disposal does not allow of going into the details of this system, to which Mr. Lubin brought the experience of a lifetime as pioneer in the organization of the mail-order business.

Suffice it to say that the proposed plan, successfully tried on a small scale by the California State Grange, was to have had an official trial for which Congress made an adequate appropriation.

BUT this was a case of "Congress proposes and the profiteer disposes." So great was the outcry raised by the latter, so assiduous the propagation of totally inaccurate statements and gross misrepresentations, and even of personal attacks on Mr. Lubin and the leading supporters of the plan, that the proposed experiment was silently dropped and the appropriation allowed to revert to the Treasury.

Here again it behooves the American farmer not to allow himself to be deprived of the advantages he could derive from the general adoption of this plan. As Lubin used to say, the parcel-post service is now almost exclusively of advantage to the city merchant; this adaptation would make it of equal value to the farmer. It is up to him to study this plan to which Mr. Lubin brought the expert knowledge of a lifetime, and to insist on its being experimented on a scale commensurate with its importance.

As the devastation of war proceeded, Mr. Lubin clearly saw that the work of reconstruction must fall mainly to America. Alone of the belligerent nations, America would issue from the struggle stronger and wealthier than before, a world power in the fullest sense of the word. It was his hope and belief that America would avail herself of this great opportunity and play her part in no mean spirit of narrow nationalism. He believed that, first among the nations, she would realize that she could best serve her own interest by serving those of others.

His deeply religious, poetic mind was characterized by the faculty of interpreting abstract truths in terms of concrete action, and in this case the work which engaged his thoughts and energies during the last weeks, and right up to the last few hours, of his life, was how to translate into

concrete reality the vision of America as the cornucopia of the nations, blessing and blessed.

Toward this end he conceived that America's rôle in the economic era which would follow the war should not be to engage in a fierce competitive fight for existing markets. She should, on the contrary, pursue a policy which would indefinitely enlarge the foreign markets of the world. Her part should be to build up industrial development in the more backward countries, assisting them with finance, with raw material, with shipping, with her unique technical developments and perfected organizing ability.

BY SO doing, he claimed, though she might raise up competitors, she would also, and to a much greater extent, raise up customers. "No one in the United States is lying awake at nights worrying about the competition of Morocco, but, then Morocco is of precious little good to the

United States," he would say, and he would go on to point out that if Great Britain was America's most powerful competitor, Great Britain was also her best customer.

Toward this end he conceived the world as mapped out into industrial zones. South America, Russia, Siberia, the Scandinavian countries, the Mediterranean basin, would afford such zones, and in each of these one or more districts should be selected as industrial bases. The base should be encouraged and assisted by American finance and American skilled expert

advice in industrial and commercial organization, to develop its manufacturing industries and to produce for exportation in the zone for which it would be the industrial headquarters. Thus he saw in Italy the future industrial base for the Mediterranean basin with its teeming populations, still so largely primitive and undeveloped.

Toward this end he advocated the formation of an international reserve bank which should do for the allied countries what the Federal Reserve Bank does for the States of the United States, pooling resources and backing up the credit of each by the credit of all, thus steadying the markets and obviating, or at least restricting, violent and destructive fluctuations in values so injurious to trade.

Deeply as he would be absorbed in the immediate business before him, Mr. Lubin never allowed it to blind him to the one ultimate aim which he always kept steadily in view—the upbuilding of the commonwealth of nations. For this he labored and had in mind in all his work, whether in the United States or in Italy or in the many other countries in which he traveled.

Do Birds Get Divorces?

IF YOU find a dead bird with a metal band on its leg, you will be doing a real service if you send the band or a report of the band number to the Biological Survey, U. S. Department of Agriculture, which is making a study of the habits of birds that may lead to some valuable discoveries.

One interesting trait hitherto unknown is the practice of so-called "bird divorces." A Cleveland bird lover has discovered one case of a bird remating and rearing another brood, although the old mate was still alive.

The method of banding the birds consists of luring them into traps, where they are caught, a band placed on one leg, and a record made of the time and place. Some of the birds come back again and again to the same traps in search of food, apparently unafraid of the handling which they receive. The Biological Survey is desirous of securing the services of a large number of amateur "bird banders" who will trap the birds and send in records of their discoveries. If interested, communicate at once with the Biological Survey, Department of Agriculture, Washington, D. C.





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California—Four women drove from Los Angeles to San Francisco and return averaging 22.3 miles per gallon. A San Francisco Essex made the round trip, 846 miles, in 33 hours

with 23 miles per gallon. Hood and radiator sealed.

San Antonio, Tex.—In a 166 mile run to Austin and return, Essex averaged 25.5 miles per gallon.

Sacramento, Calif.—Defeated 19 entries and took Tallac Cup for highest gasoline, oil and water mileage in Sacramento Dealers reliability run.

Baltimore, Md.—Essex sedan, on original tires with 15,000 miles service, traveled 221 miles over Maryland hills, averaging 23 miles per gallon.

Florida—On a measured gallon an Essex cov-

ered 23 miles and without change or adjustment of any kind showed speed of 68 miles per hour.

49 Cars Average 18.9 Miles per Gallon—Records cover every kind of test at a speed of from 5 to 72 miles per hour.

Los Angeles, Calif.—To San Francisco over 828 mile route of steep grades and frequently far from water supplies Essex which had previously gone 28,000 miles and under U. S. Marine observation made trip sealed in high gear with sealed hood and sealed radiator. Average 22.8 miles per gal. gasoline.

Also Broke World's Dirt Track Record—1261 Miles

Made at Dallas, Texas, by a Car That Had Already Gone 12,000 Miles

From the mere standpoint of gasoline mileage, Essex in its nation-wide tests showed a performance worthy of cars which possess that advantage as their principal quality.

Records were kept on 49 cars. They averaged 18.9 miles to the gallon.

But bear in mind this was not done by taking advantage of every device possible to increase gasoline mileage. Under conditions of that sort, Essex showed as high as 37 miles to the gallon. However, men don't drive that way. How obviously unfair it would be, therefore, to offer such carefully economized fuel mileage tests as typical of all Essex cars.

In the Essex tests, conditions and performances adverse to gasoline economy obtained.

These cars were being driven at speeds from 5 to 72 miles per hour. They were reeling off thousands

of miles over all sorts of roads in inter-city runs that set new time marks. They were making new hill-climb, acceleration and endurance records.

Many were owner cars—owner driven. Women piloted some.

Some of the Essex cars used had already traveled upwards of 30,000 to 35,000 miles.

So you must not view Essex economy merely by its gasoline consumption. You must also consider its endurance and reliability.

If there were nothing more striking about the Essex than its gasoline mileage, it would be a worthy subject of our advertising. But important and impressive as that fact is, does not its other qualities take first rank in your consideration?

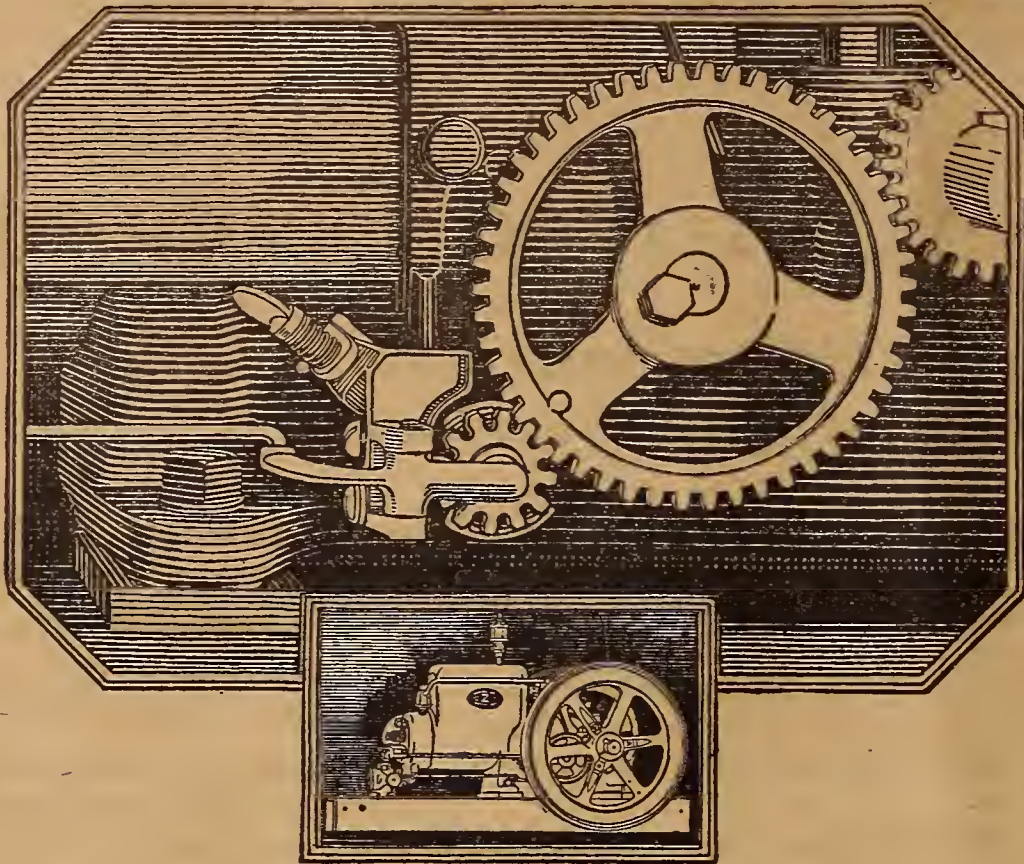
Essex Motors, Detroit, U. S. A.



WATCH the ESSEX



FAIRBANKS-MORSE "Z" FARM ENGINES



Throttling Governor Gives Steady Speed

Every "Z" Engine is equipped with a sensitive throttling governor. Regulates the amount of fuel and air admitted to cylinder—maintains uniform speed—summer or winter, regardless of work being done.

Throttling governor enables the "Z" to run on kerosene as well as gasoline—saves you money.

Governor is a complete, high grade assembly unit—not a makeshift device. Its case-hardened contact parts resist wear.

The throttling governor has mighty important duties: Helps maintain uniform cylinder temperature—gives smooth, steady flow of power that saves wear and tear on belts and the driven machinery.

Other "Z" features are: Bosch magneto, more than rated power, parts interchangeable; clean cut design; long life.

Go to your nearby dealer today and see the "Z." He will show you why you should have one.



PRICES { 1½ H. P. \$ 85.00
3 H. P. 135.00
6 H. P. 220.00 } All F. O. B. Factory

FAIRBANKS, MORSE & CO.

MANUFACTURERS - CHICAGO

The Canadian Fairbanks-Morse Co., Ltd., Montreal.



How Seabrook's 30 Acres Became the World's Biggest Truck Farm

[CONTINUED FROM PAGE 9]

too careful about branding or trade-marking a product. There are lots of folks, especially beginners, who think there is some particular magic in a good brand or trade mark that will help solve most of their marketing problems for them. Nothing to it. Brands and trade-marks are a waste of time until you've got *quality*. It takes years to build up a reputation. It can be lost in a single season. Until quality is made sure of, the less one does in the way of branding or trade-marking the better.

Making quality sure is one of the big advantages of irrigation. You can get uniform production of most things every year. It overcomes absolutely the biggest trouble we used to have to contend with in trying to maintain uniform quality—that is, the danger of droughts and dry weather. Of course, irrigation increases profit in other ways too—it often doubles and trebles the crop that could be obtained without it. We now have 220 acres under irrigation, and are planning to extend this.

Most visitors want to know about our greenhouses for vegetable forcing. We have made them pay, but consider that one of the biggest profits they yield is in helping us to hold our organization together through the winter months, and also to help hold our market.

There should be enough "glass" in connection with any market-garden enterprise to help keep the available laborer busy during the slack winter months. I find, too, that many folks think, because of the tremendous crops we grow here, that we must have worked out some patent system for maintaining fertility. We haven't.

There's no secret about it, except to have a superabundance of plant food in the soil. Whatever is left over, the next crop will use. We spend \$200 to \$300 an acre for manure and fertilizer—sometimes considerably more than that on new land that has not yet been brought up to our standard. Frequently, after buying a new farm, we have put on during the first season half the value of the land in fertilizers and manure—and get it back within the year.

We bank on manure—as you may suspect from the amount of it you can see along our railroad siding.

AS TO fertilizers, we do not attempt to mix our own, but have it made up especially for us out of ingredients which we know. We use, most, the standard market garden analysis, and in addition a top-dressing of 200 pounds or so per acre of nitrate of soda.

In the important matter of marketing, a *quality product* is vitally necessary. While one should keep closely in touch with the market and take advantage of the best prices, there is something even more important to keep in mind. I refer to the matter of building *good will* for the future.

Many times we have made a temporary sacrifice, either in not selling stuff that we could have sold, because it was not quite up to our highest standard, or by letting it go for less, and sometimes for considerably less, than we could have got by holding out for the last penny when we knew our customers would have been compelled to pay practically anything we asked because of temporarily unusual market conditions. That is one of the reasons why, when the shoe is on the other foot and the market is flooded, Seabrook products get the preference they do. This good will, however, would hardly last overnight without a strict maintaining of our quality policy.

Value of Purebred Bulls

THE first cross of a purebred bull on the average dairy herd increased the income \$32 per cow. These figures were secured in the province of Ontario in a comparison of 140 herds using grade bulls and 31 using purebreds. Mr. Rex E. Willard, of the Farm Management Department of the North Dakota Agricultural College, in applying these figures to North Dakota, shows that if one farmer with 20 cows using grade bulls received an income of \$1,680, his neighbor with 20 cows, but who began using purebred bulls five years ago, should receive \$2,320, or \$640 more.

THE SERVICE SHOE FOR OUTDOOR MEN



This U. S. Army Style, Munson Last, Goodyear Welt Shoe
Direct from Factory to You

These shoes are built to meet the demands of men who give a shoe hard wear. Of solid construction throughout, made by expert workmen and are guaranteed to give comfort and service.

Uppers of prime chrome tanned grain leather, mahogany color, full vamp under tip, no ripping, two full soles, best oak tannage, sewn by Goodyear welt process, perfectly smooth inside, no nails to tear your socks, solid grain leather insole, solid leather counter, first quality all leather heels, one piece lifts, full bellows tongue (dust proof).

WE GUARANTEE these shoes to be exactly as advertised, and to replace them, if through any fault of ours they fail to give satisfactory wear.

By Ordering Direct you can buy these \$10.00 shoes at

\$6.75 Per Pair

We Pay Postage
Send Money Order or Check today for \$6.75.

Stock No. 68F

LOOK BEST—WEAR LONGEST

The SERVICE SHOE Co., Drawer 1116, Worcester, Mass.

Earn Big Money

E.J. SWEENEY
PRESIDENT

PICK YOUR JOB

Farm Mechs.	\$125
Tire Men	150
Drivers	150
Repair Men	200
Taxi Drivers	175
Tractor Men	200
Garage Owner	400

Pack your grip today and come to the Sweeney School of Auto, Tractor and Aviation Mechanics. Strike out for the big money and a world wide opportunity.

Expert Mechanics Wanted The machine expert is the boss of creation today, whether on the farm or in the city. If you are mechanically inclined learn to make and repair autos, tractors, trucks, gas engines, auto tires, etc., in **Eight Weeks** by

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Learn as 35,000 other men have learned—by tools, not books. Learn power farming on my big Tractor farm—18 tractors. Learn to make a \$30 tire from 45c worth of junk. Learn to fix any piece of machinery. You can't get this System anywhere else. Thousands of opportunities for experts trained in this Million Dollar School—the greatest in the world.

FREE Send today for my 72-page catalog, or simply say when you're coming and I will have classes arranged and your rooms ready. I guarantee railroad fare round trip if you find a single misrepresentation.

EMORY J. SWEENEY,
President

LEARN A TRADE—Sweeney
SCHOOL OF AUTO-TRACTOR-AVIATION
840 SWEENEY BLDG. KANSAS CITY, MO.

Romance of the Red-White-and-Roans

[CONTINUED FROM PAGE 15]

Then you might tell me all the different kinds of relations he was to his great-grandma, Phoenix. Remember that his father was also his grandfather, and that his grandfather was a son of his grandmother. This is a fine example of what we call in-breeding. It is the basis of prepotency, or the ability of an animal to stamp itself on its offspring. A prepotent sire cannot help but do that because its ancestors are reduced to a comparative few. Almost all the great breeds trace back to some prepotent, in-bred sire.

The Collings were the first advertisers of Shorthorns, and their clever methods attracted much attention to the breed. It was about 1800 when Charles Colling had a five-year-old Shorthorn steer which he had fed to a weight of 3,024 pounds. He sold the bullock for \$700 to Mr. Balmer, who had a special wagon built, and exhibited him all over England as a sort of side show. This animal was known as the Durham Ox. Robert Colling fed a white heifer which was exhibited in the same way. She goes down in history as "The White Heifer That Traveled."

EVEN to-day if you go round some of the Shorthorn sales you will hear them talking about "Booth cattle." They mean Shorthorns descended from those bred by the Booths in Yorkshire. The original Thomas Booth established his herd before the beginning of the nineteenth century. He bought his foundation animals from the Collings. His idea was to breed Shorthorns with bigger heart girths and more chest capacity—more rugged cattle. At the same time he sought to thicken the flesh and make the cattle easier feeders. He was not so strong for quality and smoothness as some others—Thomas Bates, for instance.

In the showyards of that day there was an interesting war on between the "Booths" and the "Bates," two distinctly different types of Shorthorns. The refined, beautiful, quality Bates cattle won then, but to-day the Booth idea of scale and ruggedness and easy fleshing is far in the ascendency. Thomas Booth had two boys, John and Richard, who were so interested in what their father was trying to do that when he died they took up his work where he left off.

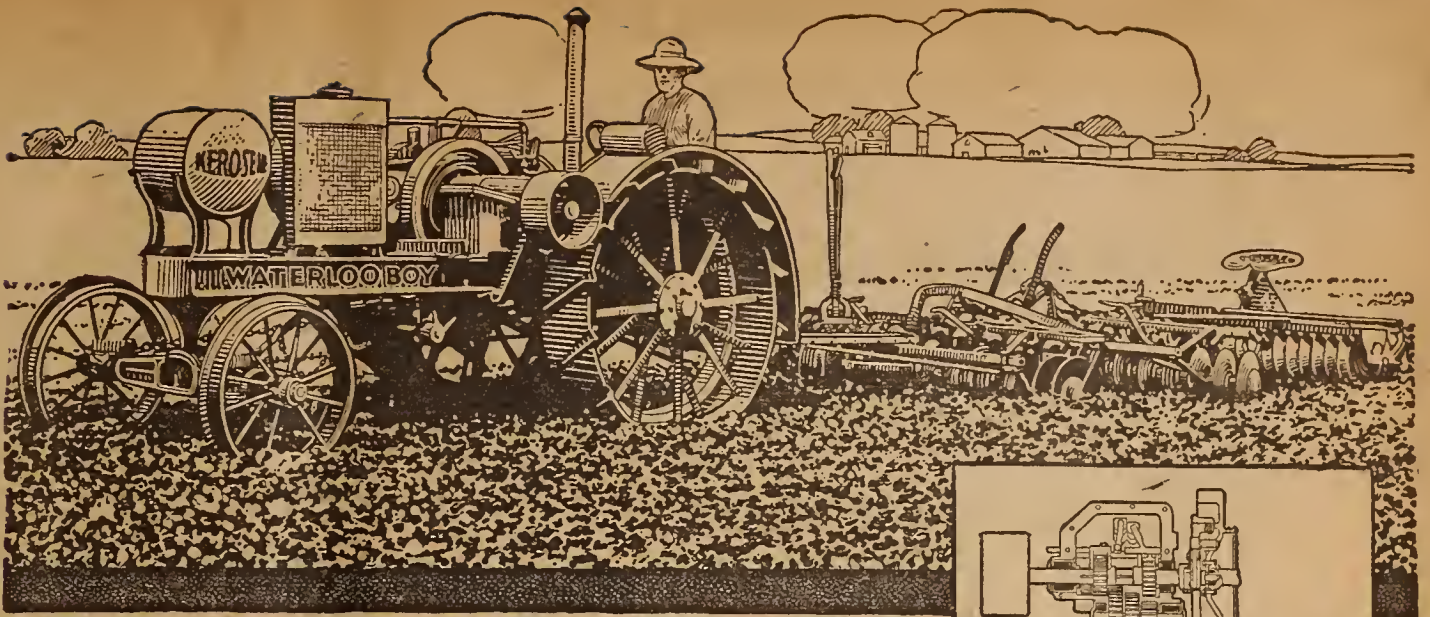
This was fortunate, because one generation is scarcely long enough for even the most skillful breeder to finish his work of improvement. John Booth died in 1857 at seventy years of age, and Richard lived to be seventy-six passing away in 1864. Richard's nephew, John Booth, inherited his herd, and upon his death in 1878 his son took up the work. So for nearly a century and a half the Booths have been a strong influence in shaping the breed in the mother country.

Thomas Bates was a brilliant but eccentric bachelor who lived on a farm called Kirklevington, near Yarm, in Yorkshire. His sayings and ideas about cattle-breeding are famous to this day. He it was who said: "You can find a dozen men fit to be prime minister of England to every one fit to judge Shorthorns."

As a young man Mr. Bates went to the University of Edinburgh, and acquired a thorough education as a background for the great cattle breeder which he was determined to become. He went to the Colling Brothers, and probably learned all they had to teach him. Then he started out for himself.

HE HAD ideas of his own. He believed that the milking qualities of the Shorthorns should be greatly improved, and that they must be cattle of refinement and quality. He kept very careful records. He weighed his feed, measured the milk which his cows gave, and churned the butter from each one separately so as to know how rich the milk was. Thus Thomas Bates really established an advanced registry of his own a half-century before the Babcock test was invented. One of his greatest bulls was named Belvidere. Mr. Bates was driving along the road one day and saw the bull's head through the barn door. He is said to have remarked instantly that that was the bull which he must have to complete his work of improvement, and bought him at once. Most of the Bates cattle belonged to his famous Duchess family—the bulls were called dukes, such as Duke of Northumberland, and the cows duchesses, such as 8th Duchess of Geneva. Mr. Bates died in 1850.

Almost twenty years before that, some



Why the Waterloo Boy Gives Maximum Power At Drawbar and Belt

The engine of any tractor will deliver its maximum power only when shaft and axle bearings run without friction. Friction means wasted motor energy.

The Waterloo Boy Tractor is equipped with heavy-duty roller bearings. Friction is reduced to the minimum. Engine efficiency is increased. Maximum power is delivered at drawbar and belt.

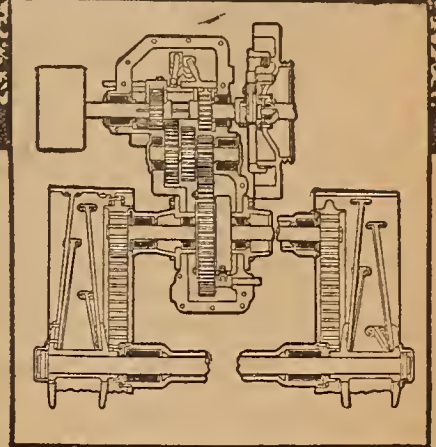
WATERLOO BOY BURNS KEROSENE COMPLETELY

Eleven Hyatt roller bearings are used on the Waterloo Boy. Three are on the engine extension shaft which operates the belt pulley, and carries the high and low speed gears. Two are on the intermediate shaft, whose gears transmit tractive power to the differential. Four are on the differential shafts, which drive the tractor, and two on the rear axle, carrying the rear weight of the outfit. These particular bearings have an established reputation for their special ability to reduce friction and conserve power.

The Waterloo Boy engine is placed crosswise on the tractor frame. This eliminates bevel gears. Bevel gears cause friction. Waterloo Boy drive is direct through straight gears, another power-conserving feature.

There are many other superior features of Waterloo Boy construction and operation. Its simplicity and accessibility, its powerful 12-25 H. P. engine, its ability to burn kerosene and burn it right, a pump, fan and radiator cooling system, all contribute to make the Waterloo Boy an especially good tractor for your farm.

We have a booklet describing the Waterloo Boy fully. You will want to read it. Address John Deere, Moline, Illinois, and ask for booklet WB-78.



The small shaded portions in the above illustration show the exact location of the heavy-duty Hyatt bearings on the Waterloo Boy. They reduce friction, thus giving maximum drawbar and belt power. All the gears shown above are enclosed in a dust-proof case, and run in oil.

John Deere Implements, and Waterloo Boy Tractors and Kerosene Engines are distributed from all important trade centers. Sold by John Deere dealers everywhere.

JOHN DEERE

THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

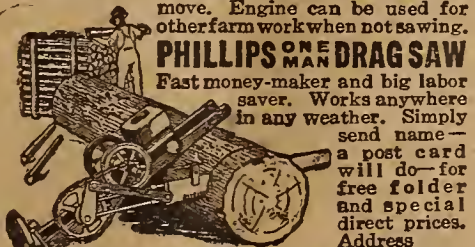
100 Acres, \$3300, With 8 Cows, Horse, Crops, Tools

Big money-maker, prosperous community, all ready business; machine-worked fields, spring-watered pasture, wood, and fruit trees; 12-room house, basement barn, other buildings, fine shade; near RR station, high school; immediate buyer gets 8 cows, 4 yearlings, horse, machinery, tools, part growing crops; only \$3300, part cash. Details this and another with 22 cows and 3 horses and growing crops, page 24 Strout's Big Illustrated Catalog Farm Bargains 33 States. Copy free. STROUT FARM AGENCY, 150 D P. Nassau St., New York City.

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SAWS WOOD FAST Does the Work of Ten Men — $\frac{1}{20}$ Cost

This one-man cross-cut saw outfit run by gasoline engine cuts 15 to 35 cords of wood a day—fells trees—makes ties—runs machinery. One man or a boy can handle it. Easy to operate, easy to move. Engine can be used for other farm work when not sawing.

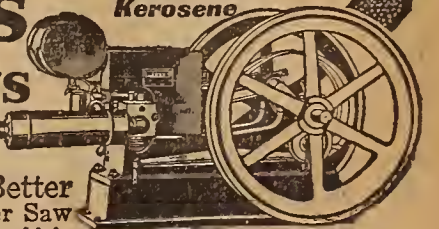


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Engines Power Saws Drag Saws

2 to 30 H-P.
Kerosene



I Will Sell You a Better Engine, Drag Saw or Power Saw at a lower price than quoted on any high-grade, high tension ignition outfit. High Tension is the kind of ignition used on autos and tractors—the kind that is best—the kind you know about.

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KEROSENE ENGINES

are fuel saving—easy to operate and long-lived. Big surplus power. Burns cheap coal oil, kerosene, distillates, gasoline or gas.

BOSCH Magneto —All Modern Equipment

My Drag Saw cuts faster—it has Friction Clutch Lever Control—Starts and Stops Saw while Engine runs.



Saws Logs Any Size
Does the Work of Ten Men

Direct Factory Prices

Large quantity production in a modern factory enables me to offer you a superior engine—save you \$15 to \$500. You get an engine that will do your work at less cost for fuel. You deal with the largest exclusive Engine factory in the U.S. selling direct. Lifetime Guarantee. Write today—tell me what size you need or the work you want it to do and I will send you full information with new reduced prices by return mail.

Easy Terms If you do not wish to take advantage of my low cash price, I am ready to meet you half way on any plan that suits you. First write for the WITTE book. Get this valuable book before you decide on any engine or saw outfit. It tells you how to judge engines and makes it easy for you to decide. Big saving if you buy now. Write today. Ed. H. Witte, Pres.

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The Clark Grave Vault

"That They May Rest in Peace"

Provides the handsomest, most dignified and substantial casket container ever known. The Clark Grave Vault is guaranteed to keep contents dry for half a century. Its "diving bell" design built of heavy Keystone copper-bearing steel, electrically welded, is practically everlasting. For booklet of disinterment affidavits address Dept. B-34.

The Clark Grave Vault Co.

Town and Starling Sts.

Columbus, Ohio

Casket in perfect condition after three years' burial—reburied in same vault.

Clark Vaults are backed by 20 years of satisfactory Steel Vault Building.

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To those who love crocheting, tatting, and knitting



Seven Priceless Volumes

CONTAINING more than 150 individual designs for yokes, boudoir caps, scarfs, curtains, edgings, insertions, bags, novelty pieces, sweaters, babies' leggings, robes, bonnets, etc. Instructions and illustrations for the designs are so clear that even a beginner can work them. This library enables any woman to save money during the Christmas Season and at the same time, present gifts that will be the delight and envy of her friends.

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farmers from Ohio and Kentucky had gone over to England for Shorthorns and bought a few cattle from him. Among these was a heifer named Young Mary, and another called Rose of Sharon. Each became the ancestress of famous lines in Kentucky, and at Shorthorn sales to-day you will still find an occasional "Young Mary" or "Rose of Sharon" tracing to these cows.

After Bates's death his cattle became exceedingly popular in both England and America. An attempt was made by certain men to buy up all the "pure Bates" cattle. Some Americans had already brought over some of the most famous of the "duchesses" before the Britishers realized it. The climax was reached on September 10, 1873, at the auction at New York Mills, New York, when the Englishmen came over here to buy back these "royally bred Bateses" regardless of price. The Americans wanted to keep the Bates blood too, so a great bidding contest developed, and in that one auction 109 head sold for \$381,990, an average of \$3,504. Besides the 8th Duchess of Geneva at \$40,600, the 10th Duchess of Geneva sold for \$35,000.

BUT the bloom was off the rye. The high-priced cattle amounted to scarcely anything. Many of the females had no calves at all. Some said it was due to the fact that Thomas Bates had too closely in-bred them; others claimed that it was because the herd had had foot-and-mouth disease. Booms are always bad for any breed. But the real reason why the bottom fell out of the Bates boom was because a tenant farmer up in the bleak, raw county of Aberdeen, in northeastern Scotland, was breeding a new type of Shorthorns which would return more profit under practical farm conditions.

The name of the Scottish farmer who revolutionized the Shorthorn trade was Amos Cruickshank. He bred his cattle on a farm called Sittyton. Oats and turnips were the chief crops. He needed cattle which would do well under the cold, harsh weather of Scotland on straw, turnips, and perhaps a little oil cake, purchased from America. The refined Bates cattle were not suited to such rigorous conditions, so he set out to breed hardier, more rugged cattle, short-legged, blocky, meaty, wide-backed, deep-chested, and easy-keeping. He succeeded so well that his cattle, after a bitter contest running through a decade or two, swept everything before them.

All cattle descending on both sides from animals bred by Cruickshank are called "Scotch Shorthorns," or "pure Scotch," or "all Scotch." Shorthorns whose sires trace to Cruickshank cattle, but whose dams run back to the earlier American importations bred by Bates, are called "Scotch-topped." In the sale ring to-day a "Scotch-topped" Shorthorn will not bring as much as a "pure Scotch" one of equal merit. Least popular of all to-day are the Bates cattle, also styled "American" or "plain-bred" families, but when we come to consider the Milking Shorthorn breed we shall see how Bates's work is being carried on to-day.

Amos Cruickshank died in 1895, aged eighty-seven. He lived to see his type of cattle completely triumphant. A Canadian named James I. Davison was his American agent, and did much to spread the popularity of the "Scotch" Shorthorns on this side. When Mr. Cruickshank retired, there was a plan on foot to buy his herd intact and bring it to America. It fell through, however, and most of the females were sold to J. Deane Willis, who took them to Bapton Manor in England, and has since that time taken rank as one of the world's greatest Shorthorn breeders.

IN BRAW Aberdeen remained the effects of Cruickshank's work, however, and not far from Sittyton to-day you may find such men as William Duthie, who lives at Collynie Farm, near the village of Tarves, raising Shorthorns which are eagerly sought by breeders all over the world. Mr. Duthie's last bull calf crop, twenty-four of them, sold for an average of \$7,000.

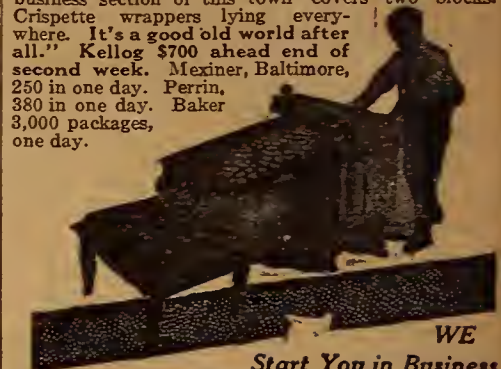
There were other noted old-time breeders in England and Scotland who contributed each his bit to making the Shorthorn heifer calf which you buy to-day just what she is. There was William Torr of Aylesby, whom Queen Victoria called "the best farmer in England." There was William Wetherell of Aldborough, who was the great auctioneer of the day, as well as a breeder. There was Captain Barclay of Ury, who was a great sportsman and once walked 1,000 miles in 1,000 hours to win a bet. And many others.

The first Shorthorns came to America in 1797, long before the breed had a name or a herd book either. They were brought to

\$365.75 ONE DAY

Ira Shook of Flint Did That amount of business in one day

making and selling popcorn Crispettes with this machine. Profits \$269.00. Mullen of East Liberty bought two outfits recently. Feb. 2, said ready for third. J. R. Bert, Ala., wrote Jan. 23, 1920: "Only thing I ever bought equalled advertisement." J. M. Pattilo, Ocala, wrote Feb. 2, 1920: "Enclosed find money order to pay all my notes. Getting along fine. Crispette business all you claim and then some." John W. Culp, So. Carolina, writes: "Everything is going lovely—business is growing by leaps and bounds. The business section of this town covers two blocks. Crispette wrappers lying everywhere. It's a good old world after all." Kellogg \$700 ahead end of second week. Mexiner, Baltimore, 250 in one day. Perrin, 380 in one day. Baker, 3,000 packages, one day.



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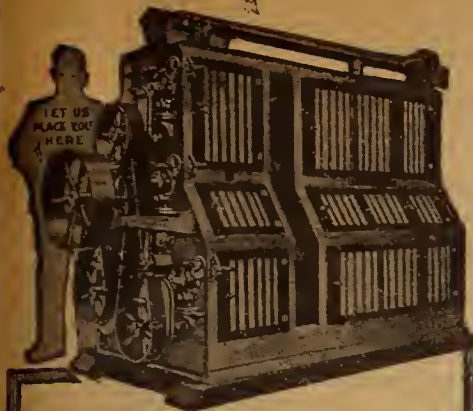
No experience necessary. No capital required. All you do is to take the orders. We deliver by Parcel Post and do all collecting. Commission paid same day your orders are booked. Work full time or spare time. Easy to get orders on account of two coats for the price of one. Get started at once. Big season now on. Send for sample coat to wear and show.

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and freight prepaid on the "RANGER" bicycle you select. Write at once for our big catalog and special offers. Select from 44 styles, colors and sizes in the "RANGER" line. EASY PAYMENTS if desired, at a small advance over our Regular Factory-to-Rider cash prices. You cannot afford to buy without getting our latest propositions and Factory-to-Rider prices and terms. Boys, be a "Rider Agent" and make big money taking orders for bicycles and supplies. Get our liberal terms on a sample to introduce the new "RANGER." Tires, equipment, sundries and everything in the bicycle line at half usual prices. Write today.

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and have a dignified, permanent business that will earn you steady profits the entire year.

Grind your home-grown wheat, supply your community with flour and feed. You save the freight on the wheat going out, and the flour and feed coming in.

Besides earning the regular milling profits you get the extra profit of making "A BETTER BARREL OF FLOUR CHEAPER" on the famous "MIDGET MARVEL." The new process, self-contained, one-man, roller flour mill that is revolutionizing the milling industry. It requires less than half the power and labor of the usual roller mill and makes a creamy white, better flavored flour that retains the health building vitamins and the natural sweet flavor of the wheat.

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The Blue Grass Farm Kennels, of Berry, Ky., offer for sale, Setters and Pointers, Fox and Cat Hounds, Wolf and Deer Hounds, Coon and Opossum Hounds, Varmint and Rabbit Hounds, Bear and Lion Hounds, also Airedale Terriers. All dogs shipped on trial, purchaser alone to judge the quality, satisfaction guaranteed, or money refunded. Sixty-eight page, highly illustrated, instructive, and interesting catalog for ten cents in stamps or coin.

No Rats by Sunday

On Thursday scatter small bits of "Rough on Rats" mixed with chopped meat about the place; on Friday mix dampened oatmeal and "Rough on Rats;" Saturday chopped ham with "Rough on Rats" will get all that are left. Sunday comes but rats and mice are gone. Change of bait fools the pests. Get "Rough on Rats" at drug and general stores. Write for booklet—"Ending Rats and Mice," sent free to you.

E. S. WELLS
Chemist
Jersey City, N. J.

ROUGH ON RATS

Virginia by Gough & Miller. About 1817 Henry Clay sent over, and brought some Shorthorns to his farm in Kentucky, though Lewis Sanders, also of that State, is said to have taken the first cattle of the breed west of the Alleghenies. The Sanders cattle were called "The Seventeens," because they were imported in that year. By the early thirties the business of driving fat cattle on foot from Ohio to Pittsburgh, and even as far as Philadelphia and Baltimore, had become an extensive one.

Ohio, you will remember, was the first of the Corn Belt States to be settled. The easiest way to dispose of the new crop, corn, in that pre-railroad era was to make meat of it and drive it to market on four legs. Naturally, a great demand arose for better beef cattle among the farmers feeding corn to steers. About fifty farmers around Chillicothe, Ohio, organized the Ohio Importing Company in 1833, and sent Felix Renick and two other men to England in 1834 to buy cattle. They bought 19 Shorthorns, and shipped them to Ohio, where they were sold at auction. In this early importation were the heifers Young Mary and Rose of Sharon.

KENTUCKY and Ohio, along with New York, became the early centers of Shorthorn breeding. The Bates cattle became ultra-fashionable, until finally the climax came with the New York Mills sale in 1873, with a \$40,800 cow that never had a calf.

The "Duchess" pedigrees became a fad, and extravagant prices were paid for these "papers" regardless of what kind of cattle went with them. Amos Cruickshank was already sending some of his rugged, low-legged, early-maturing, easy-feeding "Scotch" Shorthorns to Canada. Senator W. A. Harris of Kansas, a noted breeder before he went to the U. S. Senate, became the chief advocate of the new type and breeding. Finally the "Scotch" cattle triumphed completely, and the Bates cattle became the "plain-bred" ones.

The history of almost any breed may be well gleaned by learning about the great sires of that breed. Among the latter-day Shorthorns four bulls have had a marvelous influence in shaping the modern type and building the pedigrees. They are Whitehall Sultan, Choice Goods, Villager, and Cumberland.

Whitehall Sultan takes his name from Whitehall Farm, Yellow Springs, Ohio, where he was calved. His mother was an imported heifer, and his sire was a bull owned in England. Whitehall Sultan was purchased by George Harding & Son, and taken to Anoka Farm, Waukesha, Wisconsin, where he made his great record.

Choice Goods was imported by W. D. Platt of Ontario, and sold to J. G. Robbins & Sons, Horace, Indiana, who showed him to grand championship at the St. Louis World's Fair. Later they sold him for \$5,000 to the Tebo Lawn Land & Cattle Co., Tebo Lawn, Missouri.

Villager was imported by Dan R. Hanna, Ravenna, Ohio, son of Senator Marcus A. Hanna. He was used in the Cottage Hill herd, and when Mr. Hanna dispersed it, Villager was sold to John Garden, his herdsman, who became a member of the firm of Weaver & Garden, Wapello, Iowa. Cumberland was an American-bred bull. He became a famous sire in the herd of C. A. Saunders, Manilla, Iowa.

THE first pedigree record in the world was started for Shorthorns in England. It was George Coates who saw the necessity of keeping a careful record of the ancestry of the cattle. He saddled his horse and rode about all over the Shorthorn country gathering his information. In 1822 he published the first volume of the book, calling it "Coates's Herd Book." It is still published under that name.

In America the first herd book was started by Lewis F. Allen of Buffalo, New York, in 1847. Mr. Allen was Grover Cleveland's father-in-law. In 1869, A. J. Alexander of Kentucky started another book called the "American Shorthorn Record." In 1878 the Ohio Shorthorn Breeders' Association published a herd book, and continued it for three volumes. In 1882 the American Shorthorn Breeders' Association was organized, combining them all in the "American Shorthorn Herd Book," and ending the confusion.

To-day there are estimated to be 600,000 Shorthorns on American farms. The highest price to be paid recently for a Shorthorn bull was \$20,000 for Imperial Rodney, and for a female \$6,500 for Lovely of Parkdale 15th. The home of the American Shorthorn Breeders' Association is at 13 Dexter Park Avenue, Union Stock Yards, Chicago, looking out upon the great International amphitheater.

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- ☐ Sucrene Alfalfa Hog Feed
- ☐ Empire 20% Dairy Feed
- ☐ Amco Dairy Feed (25% protein)
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My Dealer's Name.....

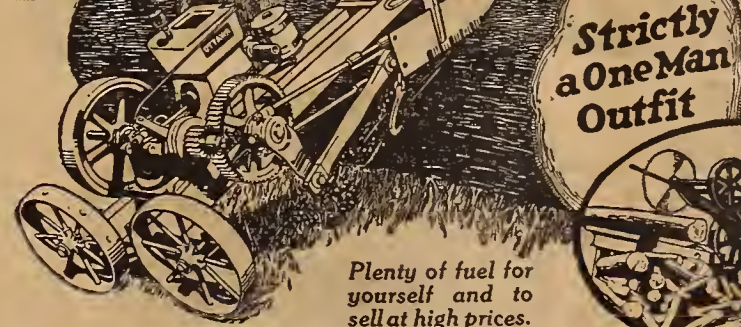
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My Name.....

P. O. State.....

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Look at this for a program!

Program

- I Carmen—Prelude to Act I
Philadelphia Orchestra
- II Madama Butterfly—Un bel di vedremo
Geraldine Farrar
- III Minuet in G
Ignace Jan Paderewski
- IV Song of the Shepherd
Lehman, Rimsky-Korsakow
- V Symphony in F Minor, No. 4
Tchaikovsky
Boston Symphony Orchestra

Program

- VI Don Giovanni—Il mio tesoro
John McCormack
- VII But the Lord is Mindful of His Own
Ernestine Schumann-Heink
- VIII Pagliacci—Vesti la giubba
Enrico Caruso
- IX Concerto for Two Violins
Fritz Kreisler and Efrim Zimbalist
- X Sextet from Lucia
Caruso, Galli-Curci, Egner
De Luca, Journet, Bada

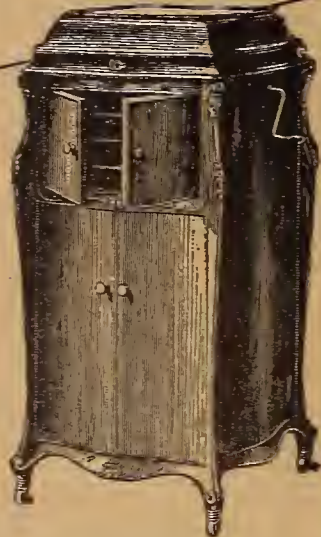
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Barn Door Latch



No 1240

A latch that really operates easily and yet is heavy and strong. It locks automatically and is operated from either side of the door.

The strong piano-wire spring is Sherardized and the bolt is tinned, protecting them from rusting.

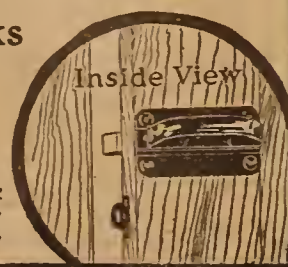
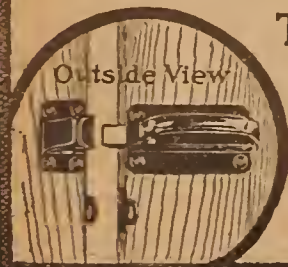
This latch is adjustable for doors from $\frac{7}{8}$ " to $1\frac{3}{4}$ " thick, and should the door sag the latch has plenty of room to still operate.

Drop into your local hardware man's store and let him show you one.

The Stanley Works
New Britain, Conn.

NEW YORK  CHICAGO

Are you building a garage? Ask for Book FF-9, it shows many styles and the correct hardware



A Fête of Fall Gold

By Emily Rose Burt

THE posters were black, strikingly lettered in gilt paint, and this is what they said:

Gold!

Yes, 'twill be a Golden Fête!
Come and see the Golden Gate,
Find the rainbow's golden luck,
Try a luscious "Golden Buck"—
Golden pleasures without end
If a golden hour you'll spend!

The hall was a perfect bower of feathery goldenrod, and hedges of golden glow from many gardens outlined the various booths.

At one end of the long room a rainbow arched, and ended in a pot of gold. The rainbow was made on a wire framework with those delicate tints of crêpe paper now available; the "pot of gold" was really a big barrel covered with bright yellow paper, and it held the mystic treasures which children, and even grown-ups, gladly pay ten cents for "grabbing." Of course, there was a pretty young lady wearing a golden-rod badge to superintend the drawing of the treasure.

One of the most popular booths was that belonging to Goldilocks and the Three Bears. Goldilocks herself, in blue gingham frock, white pinafore and flying curls, presided, and three teddy bears, in large, middle and small sizes, solemnly watched proceedings from a shelf. The things sold by Goldilocks were all sorts of little girls' and boys' belongings—rompers, garden aprons, sweaters, caps, sunbonnets, bibs, handkerchiefs, as well as some stuffed rag dollies and cretonne kittens, puppies, and bunnies.

All the fancy work was done under the patronage of that other Goldilocks—the one who did nothing but "sit on a cushion and sew a fine seam." There she sat, stitching, while at the tables close by were sold towels, dollies, runners, centerpieces, the new organdie collar and cuff sets with wool embroidery, and baby things—hem-stitched, feather-stitched, and scalloped.

"AT THE sign of the Goldfish" was a delightful little room with a bowl of goldfish on every little table, parchment candle shades with cut-out silhouettes of goldfish swimming on them transparent against the light (the shades were for sale), orange and yellow coreopsis in copper jars, and waitresses with orange-yellow aprons. Orange pekoe tea was served with tiny sandwiches filled with chopped egg, or one of the yellow cheeses.

Near-by was the Golden Buck, a merry corner where you could order a "golden buck" indeed. It was made on a chafing dish for you by a cheerful young person in a gold-colored smock. To a plain Welsh rarebit served on toast, Worcestershire and tabasco sauce were added, and topped by a poached egg.

Golden nuggets were to be mined at the next booth. These proved to be quarter-pounds of home candy wrapped in waxed paper and then in gilt foil. Even the pound and half-pound boxes were tied with gold cord, and there were certain packets of sugared popcorn labeled "Gold Bricks."

Since it was the season for Golden Bantam corn, a popular feature was Golden Bantam hot on the cob. Huge steaming kettles of it were managed by an enterprising team of young chaps.

There was a shelf of home-made cakes and cookies, with gold cake featured especially.

At the end opposite the rainbow was the Golden Gate, an inviting bower of golden glow through which you passed to find an engaging array of Japanese novelties bought wholesale. Pretty, gay-kimonoed girls with yellow chrysanthemums in their black hair took charge there.

The program was announced as a trip through the Golden Gate, and consisted of Hawaiian and Japanese features.

NOTE: Suggestions for a Golden Gate program will be sent on receipt of a stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 351 Fourth Avenue, New York City.

The Afternoon Change

A CHANGE of dress is as good as a nap. It refreshes, it brightens, it calms the nerves and gives a new impetus to the work in hand. Not only is it beneficial to the wearer, but also to those who must see her as well. Yet countless women—farm women especially—never put on a fresh dress after dinner unless company is expected or they are going to town.

A dress worn from daybreak until bedtime settles by late afternoon into weary lines that tell of fatigue and even worry. To the husband, tired from a day of hard labor in the fields, there is nothing refreshing and restful in the sight of his wife bustling around in her morning work clothes. Neither does a feeling of peace and quiet steal over them in the evening when the wife sits down to sew or mend in her crumpled work-lined gown.

"What's the use," these women generally ask, "of changing my dress in the afternoon? There's no one to see me but my own folks."

True, but the "own folks" count for something, do they not? And so, too, do you yourself. If a change into a fresh gown, with its accompanying washing of face, arms, and neck, and "smoothing up" at least of the hair, will refresh you, brighten you, make you a more cheerful companion to husband and children, the few minutes required for the change will be time well spent. The dress need not be elaborate—far from it! Elaborateness and farm chores do not go hand in hand. The dress may even be twin sister to the morning gown, but that does not matter. It is the freshness of it that counts, that absence in it of those weary, telltale lines of a hard day's work.

Margaret A. Bartlett.

Saving the Window Shade

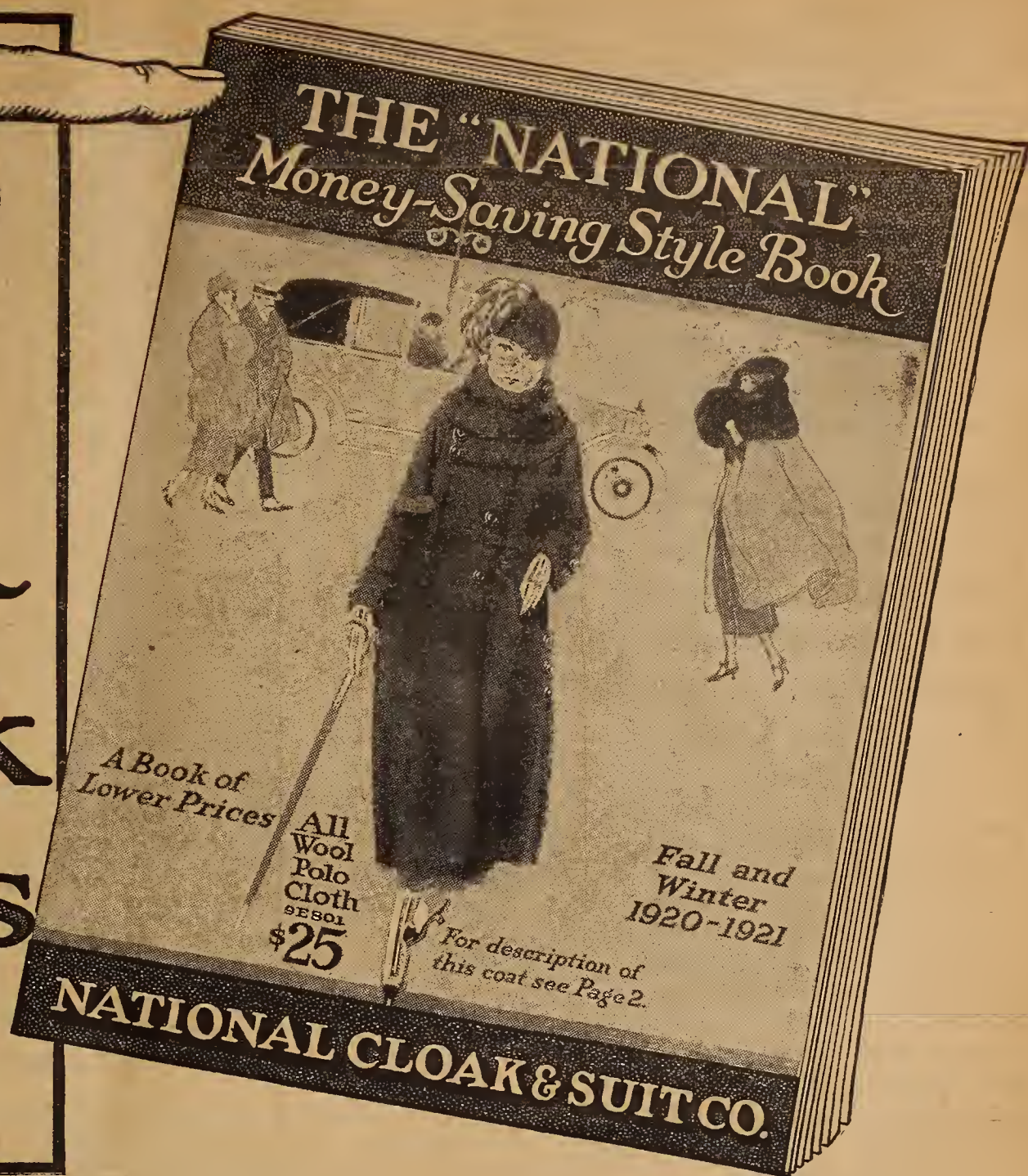
WHEN my window shades become frayed at the bottom, I do not throw them away if the rollers are good, but take them down and put them on the floor, table, or other smooth surface. Then I take something to remove the tacks from the roller, turn the shade, and tack the other end to the roller. Now I hem the bottom on the sewing machine and place the stick back in the hem. This idea I find good for kitchen, dining-room, parlor, or, in fact, any room where shades are seldom pulled down full length. They look new again, and really save expense of new ones for some time.

Mrs. H. M. Q., Nebraska.



The things sold by Goldilocks were all sorts of little girls' and boys' belongings

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THIS New "NATIONAL" Style Book is Now Ready. And one copy is yours entirely free—just for the asking.

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There are Girls' Dresses and Boys' Suits—everything for the child from infancy to maturity—everything at the new prices.

We want you to write for your copy of this Book, because we want every reader of "Farm and Fireside" to see the new styles, to know the new prices and to know the "NATIONAL" Policy of doing business.

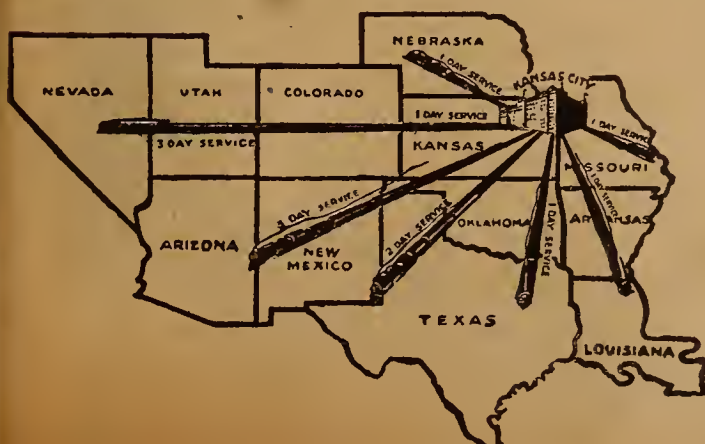
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TO serve quicker our customers living near Kansas City we have built in Kansas City a new \$2,200,000 home for the "NATIONAL."

You who live in the States shown on the map below can now order from Kansas City and get your goods quicker. You will get the same goods as in New York, the same styles, at exactly the same prices—only quicker.

And for every reader of "Farm and Fireside" living in the States shown on this map, for every reader, we have one "NATIONAL" Style Book ready to send you—free. This is the same Style Book for both our New York house and Kansas City house, filled with exactly the same styles at exactly the same prices.

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Will The Housewife Who Admits "I Know Nothing About Mazola" Please Read This Message And Begin To Save Money on Her Cooking And Salads?

IT behooves every economical housewife these days to study carefully into the matter of her food expense, and see where she can get something better than she is now using—for less money.

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Your grocer sells Mazola in pint, quart, half-gallon and gallon cans—keeps perfectly under all conditions.



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Sixty-four page beautifully illustrated Corn Products Cook Book. Write today. Corn Products Refining Co., P. O. Box 161, New York City.

Something Tasty for September

Salads for Sunday-Night Lunch

A GOOD little salad which the housewife should have at her fingers' ends is made of apples and celery chopped together and dressed with mayonnaise. This salad can be charmingly served in apples. A word about preparing your apples:

Select, of course, the prettiest and firmest you can find, peel them carefully; take out the core, and scrape out as much of the inside as is possible without allowing your knife to burst through.

In serving them, place each apple on a bed of watercress, lettuce leaves, grape leaves, nasturtiums, or other dainty green thing. They may be decorated, too, with red beets in fancy shapes. Many delicious salads may be served in these pretty apple cups.

A bit of crisp cabbage or lettuce makes a good combination with the apples and celery, and a few chopped nuts are always a splendid addition.

Different combinations of fruits may be used for variety, and a cream dressing instead of mayonnaise will be relished by everybody. To make enough dressing to serve salad to six people, pour one and one-half tablespoonfuls of vinegar over one tablespoonful of granulated sugar, flavor with a little lemon and vanilla extract, and just before serving add three tablespoonfuls of rich cream, either sweet or sour. Mix the ingredients, pour over the fruit or vegetable mixtures, and toss lightly until well commingled. When vegetables are used they should be slightly seasoned with salt and pepper.

To serve salad in cucumber boats, scoop out your cucumbers after cutting

them in two lengthwise, and cut them in boat shape. Then refill with your salad mixture. Take some wafers in the shape of triangles and fasten them like three-cornered sails upright in the front of the canoe-shaped cucumber, lay a wreath of greenery around on the plate.

For a very easily prepared dish on the salad order, there could be nothing daintier and more appetizing than whole tomatoes served with mayonnaise. The tomatoes are dropped in hot water to loosen the skins, which are very carefully stripped off.

Arrange each tomato on a bed of green, pour a spoonful of dressing over it, and chill before serving.

* * *

PICKLED ONIONS

1 peck pickling onions	3 ounces whole all-spice
2 cups salt	2 ounces peppercorns
2 quarts vinegar	2 ounces ginger root

Peel the onions, sprinkle with the salt, cover with water, and let it stand twelve hours. Drain. Add spices to vinegar, and let simmer on the stove ten minutes. When cool, pour over the onions.

* * *

CASSEROLE OF CORN

12 ears of sweet corn	4 eggs
4 tablespoons butter	1 teaspoon salt
	$\frac{1}{8}$ teaspoon pepper

Grate the corn and add the melted butter. Beat the eggs separately, and add the yolks, salt, pepper, and fold in the whites. Pour in a buttered casserole, and bake in a warm oven forty-five minutes.

Nuggets from the Household Mines of Farm and Fireside Readers

A VALUABLE hint to those still using kerosene lamps is to soak new, dry wicks in vinegar, and dry before using. Or, as I did recently, take the wicks out of the lamps you are now using, and wipe them as dry as possible with waste cloth, then wash in hot soapy water, and boil. Dry, soak in vinegar for at least fifteen minutes, dry again, and then they are ready for use. The result will be a clear, bright light, with no odor, and last, but not least, a smokeless chimney, even when the light is turned high.

Mrs. M. D. B., Washington.

* * *

A NEW WAY TO CORE APPLES—A clean, new wooden clothespin, pressed firmly into the blossom end of an apple and given a single dexterous, circular twist, will remove the core perfectly.

E. A. P., New York.

* * *

If you want your windows to look shiny, use one tablespoon of kerosene to every four quarts of water. No soap is necessary.

L. A., Michigan.

* * *

If you dip your new broom in hot water once a week, it will become tough and durable. It will also last longer.

Mrs. L. A., Michigan.

* * *

CLEANING BLACK LACE—When black lace is soiled it has an ugly shine. This can be

remedied by soaking the lace in skim milk, changing the milk until the lace is perfectly clean. Alcohol, ether, or gasoline will also clean black lace well. M. K., Montana.

* * *

I WANT to tell FARM AND FIRESIDE how I made two pretty serviceable comforts with very little work and no expense at all. I had several half-worn gingham and chambray house dresses, an old linen skirt, an old sateen petticoat, a green poplin dress, some partly worn shirts, and a few new pieces—all too good to throw away, and not good enough to make over. I ripped these up, pressed them, and from the best parts cut out large blocks fourteen inches square, and small ones over seven inches square. I pieced one top entirely out of small squares, one of alternate blocks of large ones, and four small ones pieced into a block. The linings were both made entirely of large squares.

I did all the sewing on the machine, so it did not take long. I used twine taken out of flour sacks to tie them with.

When I had the covers made I took two old comforts that were too badly torn to use, and removed the old covers. I laid the new linings on my clean floor, then an old comfort on each, and on top a new cover. The covers were pinned evenly to the comforts all around, and tacked. This is so much quicker than using a frame. My comforts are large and pretty, and the material is better than I could afford to buy.

Mrs. F. S., California.



MAZOLA

David Blair's Column

Isn't it true that we all like stories of others' success? When you come to think of it, that's only natural. All of us want to be successful. So we just naturally take to reading about how others have gotten ahead.

For my part, I always get a lot of good from reading success stories—not mythical stories, mind you, but stories of real men and women living right around us. That is why I read Farm and Fireside so faithfully every month. It is always filled with articles of men and women who through their own efforts, have overcome seemingly unsurmountable obstacles and have reached the goal of their ambitions. I know they are all true stories and what I like particularly about them is that they are not written by a lot of swivel-chair editors but by men and women out on the farm who know from experience what they are talking about.

Reading Farm and Fireside helps me a lot. It gives me more faith in my work, makes me feel sure that in getting farming men and women to subscribe to Farm and Fireside, I am doing them a good turn. Then, too, Farm and Fireside is such a cheerful and optimistic magazine that it makes me feel cheerful and optimistic. So after reading it, life always looks up a bit and I tackle my work with renewed vigor.

I sometimes wonder if all of our readers get from Farm and Fireside all the good that's in it! Thousands do, I know. From their letters it seems that they have caught the spirit and purpose of the magazine.

In a nut-shell, Farm and Fireside's big purpose is to help you and its other readers to help yourselves. It does this by seeking out men and women who have been successful and getting them to tell you in their own words, how they did it.

Some day Farm and Fireside may contain a story of your success written by yourself.

David Blair
Manager Subscribers' Bureau
FARM & FIRESIDE
The National Farm Magazine

Could You Paper a Room?

THERE is no mystery about paper-hanging. An amateur can do the work as well as a professional. This saves a good deal of money, for rooms can be papered very cheaply if you do not have to pay for the labor, and nothing brightens a house more than well-chosen wall paper.

Before selecting your paper it is of course necessary to measure the walls so that you can buy just what is needed, with perhaps a little extra for future repairs. A double roll of wall paper contains 70 square feet; a single roll half this amount.

A wall that has never been papered should first be covered with a good size, otherwise the paper will peel off. This is made by adding six quarts of hot water to one-half pound of glue which has been softened by standing all night covered with cold water. Walls that have been painted should be gone over with ammonia water—one part ammonia to six parts water. Cover board ceilings with cloth before papering.

THE ceiling is papered as follows: Cut as many strips as will be necessary to cover it, and leave long enough to allow the ends to lap down on the side wall about two inches, taking care to make the pattern match. Draw a chalk line across one end of the ceiling 16 inches from the wall, as a guide for hanging the first strip which goes between this line and the wall, and will lap down on the side a little. Lay the strip on a table, apply the paste evenly, fold both ends toward the center, making them meet, and being careful that the sides are even. Trim the paper with shears. Unfold one end, commence at the side, and start the strip straight by the line, smoothing it down as you go with a brush. Keep the rest of the paper in front of you, letting it hang over a roll of paper which you hold in your left hand.

After the first strip is on the rest is easy. The last strip must also lap down on the side wall. Cut the paper for the side wall long enough to come under the border a little. Begin to lay it at the side of a window or door; unfold the top of the strip, put in position, then work downward. Lay on each strip in the same manner, put on the border, and the work is done.

You can make a very good paste by rubbing a pint and a half of flour smooth in a quart of cold water. To this add four quarts of boiling water, and boil slowly for ten minutes, stirring constantly. When cold, stir in one tablespoonful of powdered alum. Have the paste quite thin, and be sure not to use it until it is cold.

The woodwork about the doors and windows is first to show wear and finger-marks. This and the boards at the edge of the carpet or rug can be painted during the course of the spring cleaning. More often than not, the wall paper which has appeared soiled to you will be found to be in first-class condition, only having been dimmed by the reflected color of the shabby woodwork.

The old paint will come off easily if you use a scraper, and after brushing with a stiff brush go over the surface lightly with sandpaper. Fill nail holes or other blemishes in the wood, with putty.

ALWAYS cover the floor with papers or old cloths before beginning work. This saves trouble later on, for paint stains are not easily removed. The can of ready-mixed paint must be well stirred, for the color settles when standing, and unless it is stirred the color of the paint at the top will be several degrees lighter than that at the bottom of the can. Put the first coat on lightly, wait until it is dry, and then add the final coat. Never paint unless the air is warm and dry. If the day is fine, have the windows and doors open, so that a current of air will dry the paint.

For the ceilings a coat of milk whitewash or quicklime whitewash is a splendid finish. It can be tinted or used dead white, the latter being so soft and clear that it is generally considered to be better than the tinted whitewash. The surface to be treated should be free from dust, and if there are any cracks in the plaster fill them in. The plaster should be sifted into a bowl, and then mixed with cold water until it is about the substance of very soft dough. This is easily worked into the crevices with a small trowel or a knife blade, either of which should be dipped in cold water, so that the plaster will not stick. This work should be done quickly, so that the plaster will not have time to set before it is in place. Mix only a small quantity of plaster at a time. It should be allowed to set at least twenty-four hours before the paint or whitewash is applied.

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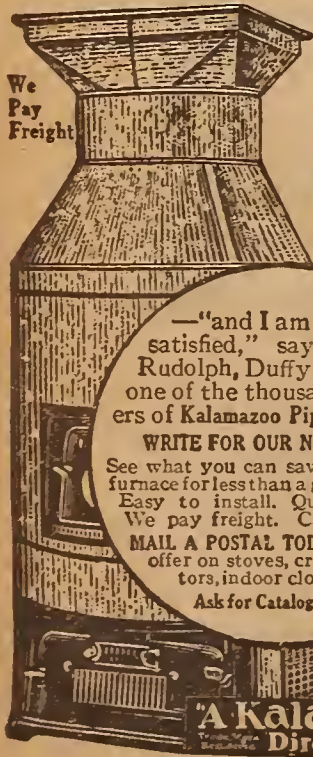
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Better Farm Babies

BETTER late than never, so here I am! Baby has arrived O. K. and surely is a Better Baby. She is a darling. She will be seven weeks old tomorrow, and I think I can see her grow.

For confinement I went to the hospital, and during excitement of getting off, etc., your last letter was mislaid, and I have just found it. Therefore the lateness of the card enclosed.

I want to thank you now for all your splendid letters. They helped me so much. I was one of the lucky women—not a sick day (shall I "knock on wood"?), not a bit of nausea, swelling, etc., just a little heartburn. I did my own work till the last.

I was at the hospital only an hour before the baby was born. It really all seems a dream, as it was over so soon. I was so well, and now have such a good baby.

My doctor told me that I was put down at the hospital as the most normal case they have had in their twenty-one months' existence. So I am quite proud, and of course the letters tucked carefully away are to be thanked so much.

I am only twenty-one years old, so didn't know very much. Your letters and my mother helped me immensely. Now, so far I've got along finely, and am at present still nursing baby. She now weighs 10 1/4 pounds.

Your booklet sent the last month will soon be worn out. There are so many valuable things in it and I use it so much.

This is rather a varied letter and I've wandered quite a bit, but never mind.

Enclosed you will find stamps in payment for the next letters—I certainly want them all, please. The baby is now seven weeks old, so please start them from the beginning.

As a Better Baby I know she'll be as healthy and happy and good as she is now. Many thanks for the helps and comfort of your letters.

Mrs. N. A. P., Massachusetts.

I WOULD like to thank you for the help you have given me.

I shall miss the letters so much. I am really sorry it is time for them to stop. I cannot tell you just how much help they have been to me.

Baby is so contented and happy. I had no idea babies could be so little bother. I have tried both ways, and I just wish I could compel all mothers to bring their babies up the Better Baby way—both for their own and the kiddies' sake. May your good work continue!

Mrs. M. C., British Columbia.



This little miss is Helen Raboin. She was an Oklahoma City Better Baby up until a short time ago, but now she is with her parents in Paris, France. We hope Paris likes her

OUR Better Baby was born April 7th, and I cannot begin to tell you how vastly I have appreciated your friendly letters. They have certainly been a source of great help and comfort to me.

Your last letter was probably the source of saving the life of my baby; for, although I had nurse and doctor engaged beforehand, when the time came I was alone with an aunt. I do not like to think what might have happened if I had not had the knowledge imparted to me from your Bureau.

Enclosed find 50 cents in stamps for your monthly letters of instruction on the care and feeding of babies under one year of age. Mrs. H. F. A., Colorado.

MY BABY is just a few days past her first birthday, and I want to thank you for your wonderful, helpful letters. Whatever I would have done without them I don't know. And, best of all, they seemed as if they came from a real friend who was interested personally in me and my baby girl.

We had moved just about the time the last letter was due, and in some way I never received it, and waited, thinking perhaps it had been delayed, but I'm afraid it has got lost.

Will you send another to my new address?

Our girl is so healthy, and I feel that I owe so much to those wonderful letters which came every month. She has always been such a good baby that I'm convinced that health and goodness go hand in hand in babyhood. Of course, I realize that the next year is the one in which we can perhaps spoil her most.

How I wish the letters went through the second year too! But I am so grateful for the help I have had. I thank you again. Mrs. E. E., California.

MAY I be allowed to join your Expectant Mothers' Circle? I live so far from America, but with my husband and Baby Joyce we have just got back here after a tour round the world, and I now expect our second baby in March.

In spite of having been round the world before she was two and a half years old, little Joyce has never caused me a moment's anxiety; but I shall be glad of your advice for little "re-Joyce." I love babies, so am overjoyed at the prospect of another one, although it will mean a double wrench when the time comes to send them home to England to school. Mrs. W. G. C. B., Federated Malay States.

What the Better Babies Bureau Is

And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with Fifty Cents in stamps, for postage, and state what month you expect your baby.

THE MOTHERS' CLUB: Every mother of young children is eligible. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends Fifty Cents in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for Ten Cents. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

BETTER BABIES BUREAU

or to Mrs. Caroline French Benton, Counselor

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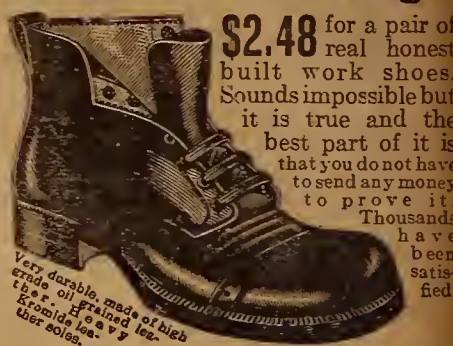


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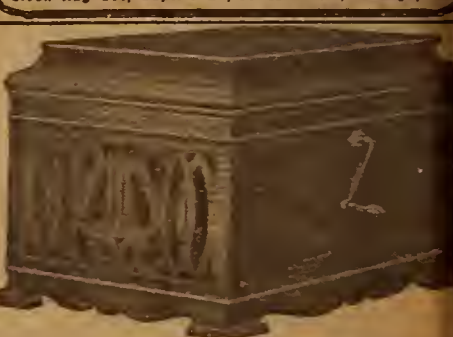
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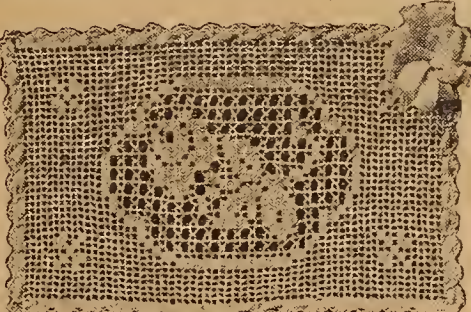
THE above yoke in filet and lacet stitches will delight those fond of pretty nightwear. Who

could help but look charming and sleep soundly and sweetly with such a lacy frame for her face?

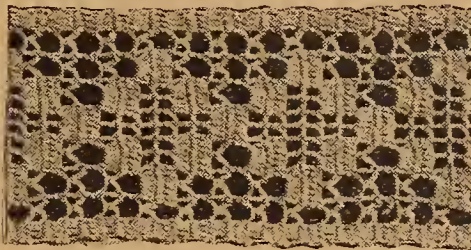


A TOWEL to put out for the best-loved guest is the one above. You have no idea how it will dress up your bathroom, merely by hanging from the towel rack. Then, too, this same lacy edge may be used for the ends of the dresser cover on the same best-loved guest's dresser. And it's just as nice on pillow slips as on towels and dresser covers.

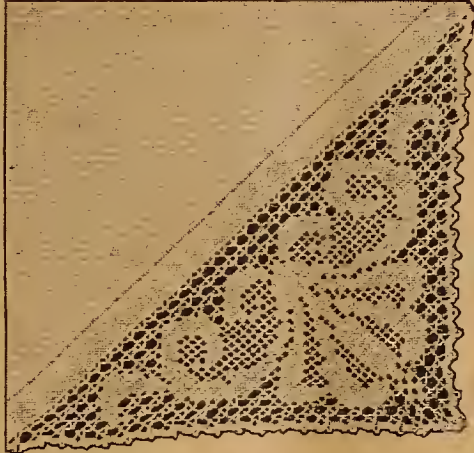
IT MAY have struck you that the designs pictured here have a "different" look. That's because they all have the unusual lacet stitch that is growing so popular. It's not a difficult stitch to catch, and once you have it it will enchant you. If you would like to try these designs send ten cents in stamps to the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio, and you will receive a booklet containing complete directions for all six of them. Order No. FC-130.



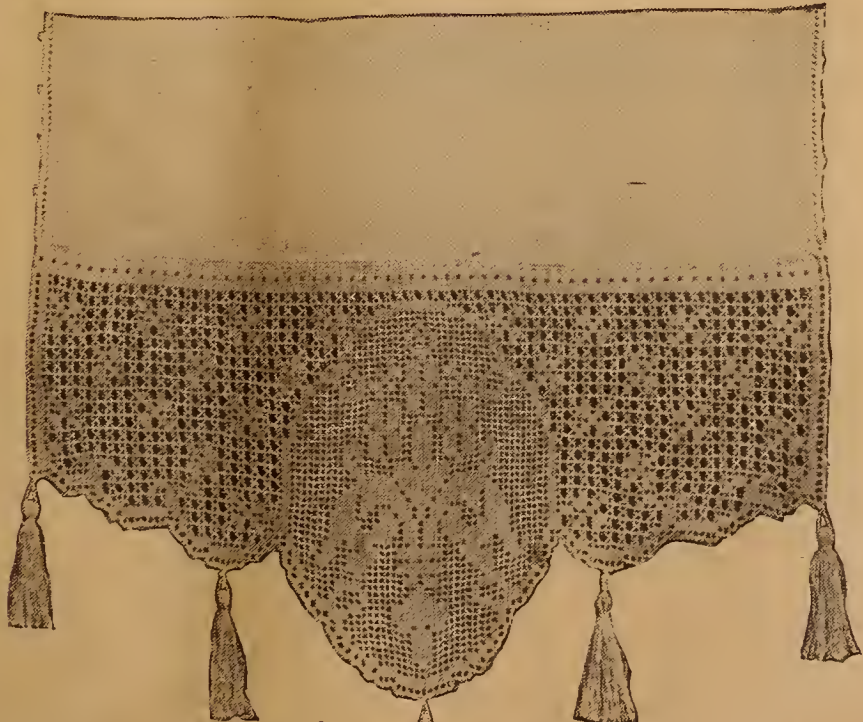
A DAINTY touch for the bedroom is this easily laundered pincushion cover. The shade the room is decorated in shines through the filet work, and helps carry out the color scheme.



JUST a bit of insertion which will add to the sweetness of your slumbers if allowed to run across the hem of your sheets and pillow slips.



AND the centerpiece, of which we show you only one corner, will be glad to add a festive touch to your board. It has that odd fascination of all the lacet designs and your friends are sure to admire it.



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Important Things to Do to Get Your Pullets to Lay Well

By A. G. Victor

DURING the summer your pullets will take care of themselves. They will do all right on the waste grain, etc., which they are able to pick up. Of course, it is well for one to provide a hopper or a feeder full of dry mash which they can have access to whenever they want it. In this way the growing pullet on the range will get her growth and develop her frame.

Toward the last of the summer she should be pretty well grown, and should soon be showing signs of maturing, such as by a slight molt and a slight reddening of the face. The comb will often begin to grow at this time. A mistake frequently made at this stage is the changing from the growing feed on the range to an egg-producing ration.

Nothing could be worse for the pullet at this time than a laying ration. On this ration she will at once start to develop her reproductive organs, and in a comparatively short time will often begin to lay. These eggs are often quite small. She lays a few and then quits, goes into a molt, and is lost as a steady egg producer until late winter or early spring.

The number of eggs she lays before molting depends to a large extent on the condition she is in when she starts to lay, and also on the kind of weather prevailing. In a mild and pleasant fall she may hold on for quite a while, depending on the extent she has been bred for egg production.

At the time the growing pullet begins to mature, as shown by the slight molt and reddening about the head, one should begin to prepare her for her winter's work. Do not let her start to lay too early. It may be that a few eggs will be sacrificed in the early fall, but a much larger egg will result, and many more of them before the winter is over, if this bird is properly prepared in the late summer.

If the pullet is to lay from 8 to 15 eggs a month during the fall and winter, she must have a surplus of flesh to fall back on. To lay that number of eggs is a tremendous strain, and a bird in a thin or worn condition cannot stand up under the pressure.

As soon as the real hot weather is over, start feeding heavy rations of scratch grains, such as whole or cracked corn, and wheat. Feed with the idea of putting a lot of fat on the pullet. This kind of feeding will hold back egg production, but don't think that a fat hen or a fat pullet cannot lay, because they can.

They will lay better and longer than a lean hen, as soon as you take them off the fattening feeds and give them an egg-producing ration.

When the pullets are nice and plump, after three weeks to six weeks of a fattening ration, and when you are ready for the eggs

to come, gradually cut down on the scratch feed. If the pullets are still on the range, you can reduce this to from 8 to 10 pounds per day per 100 birds. It is absolutely necessary at this time that these birds have access to all they will eat of a good, dry mash in which there is from 15 to 20 per cent meat scrap. If the birds are at all bred for production, they should show a pretty steady fall and winter lay.

A DOCTOR who was superintendent of the Sunday school in a small village asked one of the boys this question:

"Willie, will you tell me what we must do in order to get to heaven?"

Said Willie: "We must die."

"Very true, Willie," replied the doctor. "But tell me what we must do before we die."

"We must get sick," said Willie, "and send for you."—*Newark Speed Up.*

Ways Motor Trucks Are Saving Time

[CONTINUED FROM PAGE 11]

must get his milk to the condensery, the cheese factory, or the city nearly every day in the year. If he is on a milk route or not more than a mile or so from the station, his milk-hauling will not take a great deal of time from other work, but for men who have longer hauls the loss of time from the farm may be serious during the busy season.

A man I saw at a milk station in central New York has a 20-cow dairy, and has to haul his milk three miles. Two years ago he decided that he could no longer afford to spend two hours every day hauling milk, so he bought a light half-ton delivery truck, and easily makes the round trip in less than an hour, even

though he has all dirt roads. Another man with a 35-cow dairy, who hauls to the same station, has been using a similar truck for the last year and a half.

When the roads are bad, both these men still have to use horses. But it is not often that work on the farm is rushing when the roads are too bad for a light truck. Each of these trucks cost about \$500, and the owners say they would be profitable if they were not used for anything except hauling milk in the busy season.

Yes, the truck on the farm pays. If you should want to know about a truck suitable for your particular farm, write me in care of FARM AND FIRESIDE.



An Indiana farmer bought this truck primarily to haul his livestock to the Indianapolis market. Here he has brought back a load of feed which he is shoveling into the bin.

NUTRITION CLINICS FOR DELICATE CHILDREN
TABLE OF AVERAGE WEIGHTS OF CHILDREN AT VARIOUS HEIGHTS
Also Showing Weights 7% and 10% Underweight for Height.

BOYS				GIRLS			
Height Inches	Average Weight for Height Pounds	7% Under- weight Pounds	10% Under- weight Pounds	Average Weight for Height Pounds	7% Under- weight Pounds	10% Under- weight Pounds	Height Inches
21	8.2	7.6	7.4	7.9	7.3	7.1	21
22	9.7	9.0	8.7	9.4	8.7	8.5	22
23	11.1	10.3	10.0	11.0	10.2	9.9	23
24	12.5	11.6	11.3	12.5	11.6	11.3	24
25	13.9	12.9	12.5	14.0	13.0	12.6	25
26	15.3	14.2	13.8	15.5	14.4	14.0	26
27	16.9	15.7	15.2	17.2	16.0	15.5	27
28	18.5	17.2	16.7	18.8	17.5	16.9	28
29	20.2	18.8	18.2	20.5	19.1	18.5	29
30	21.7	20.2	19.6	22.0	20.5	19.8	30
31	23.2	21.6	20.9	23.4	21.8	21.1	31
32	24.5	22.8	22.1	24.8	23.1	22.3	32
33	25.9	24.1	23.3	26.0	24.2	23.4	33
34	27.3	25.4	24.6	27.3	25.4	24.6	34
35	28.7	26.7	25.8	28.6	26.6	25.7	35
36	30.0	27.9	27.0	30.0	27.9	27.0	36
37	31.6	29.4	28.4	31.5	29.3	28.4	37
38	33.2	30.9	29.9	32.7	30.4	29.4	38
39	36.3	33.8	32.7	35.7	33.2	32.1	39
40	38.1	35.4	34.3	37.4	34.8	33.7	40
41	39.8	37.0	35.8	39.2	36.5	35.3	41
42	41.7	38.8	37.5	41.2	38.3	37.1	42
43	43.5	40.5	39.2	43.1	40.1	38.8	43
44	45.4	42.2	40.9	44.8	41.7	40.3	44
45	47.1	43.8	42.4	46.3	43.1	41.7	45
46	49.5	46.0	44.6	48.5	45.1	43.7	46
47	51.4	47.8	46.3	50.9	47.3	45.8	47
48	53.0	49.3	47.7	53.3	49.6	48.0	48
49	55.4	51.5	49.9	55.8	51.9	50.2	49
50	59.6	55.4	53.6	58.3	54.2	52.5	50
51	62.5	58.1	56.3	61.1	56.8	55.0	51
52	65.8	61.1	59.2	63.8	59.3	57.4	52
53	68.9	64.1	62.0	66.8	62.1	60.1	53
54	72.0	67.0	64.8	70.3	65.4	63.3	54
55	75.4	70.1	67.9	74.5	69.3	67.1	55
56	79.2	73.7	71.3	78.4	72.9	70.6	56
57	82.8	77.0	74.5	82.5	76.7	74.3	57
58	87.0	80.9	78.3	86.6	80.5	77.9	58
59	91.1	84.7	82.0	91.1	84.7	82.0	59
60	95.2	88.5	85.7	96.7	89.9	87.0	60
61	99.3	92.3	89.4	102.5	95.3	92.2	61
62	103.8	96.5	93.4	110.4	102.7	99.4	62
63	108.0	100.4	97.2	118.0	109.7	106.2	63
64	114.7	106.7	103.2	123.0	114.4	110.7	64
65	121.8	113.3	109.6	130.0	120.9	117.0	65
66	127.8	118.9	115.0	137.0	127.4	123.3	66
67	132.6	123.3	119.3	143.0	133.0	128.7	67
68	138.9	129.2	125.0	146.9	138.6	132.2	68

*Without Clothing.



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See the results of the new way of teeth cleaning. They are quick and decisive. You will know at once that they mean a lifetime of cleaner, safer teeth.

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Most tooth troubles are now traced to film—to that viscous coat you feel. Film clings to teeth, enters crevices and stays.

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It is the film-coat that discolors, not the teeth. Film is the basis of

tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea. So, despite the tooth brush, all these troubles have been constantly increasing.

New methods now

Dental science, after years of searching, has found new ways to fight film. All have been proved by many clinical tests. They are so efficient that leading dentists everywhere advise them.

These methods are combined now in a dentifrice called Pepsodent. It has brought a new era in teeth cleaning. This is the tooth paste we urge you to try.

Watch the new effects

The use of Pepsodent at once reveals many new effects.

One ingredient is pepsin. One multiplies the starch digestant in the saliva, to digest starch deposits that cling. One multiplies the alkalinity of the saliva, to neutralize mouth acids.

Two factors directly attack the film. One of them keeps the teeth so highly polished that film cannot easily cling.

Pepsodent is the new-day tooth

paste, complying with all modern requirements. It does what never before was done. You should learn its benefits at once.

Send the coupon for a 10-Day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. Watch the teeth whiten as the film-coat disappears.

Every one in your family needs Pepsodent daily, and a week will prove this to you. Cut out the coupon now.

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Only one tube to a family

Are You Sure Your Child is Growing Up to be Strong and Healthy?

[CONTINUED FROM PAGE 16]

look into every case that falls below the average weight for height, even by two or three per cent, and to discover what is needed to bring the child up to his normal standard. It is just such cases, with a shortage of only a few per cent, which, under sudden strain or illness, will quickly lose enough more to become seriously underweight habitually. The only safe policy is: *Have every child above his normal weight line!*

A very common mistake is to consider only the height of a child, and to excuse his thinness because he is "tall for his age." Parents frequently boast that a boy is two years beyond the standard of his age. "At eight he wears a ten-year size suit." The important point is not his height or weight for his age, but whether he has a body weight to support his height, whatever his age may be. As he grows, every advance in inches calls for still more advance in pounds.

At the beginning of my special work in malnutrition I happened one day to read an article on poultry, printed in a magazine lying on the waiting-room table of another physician. There was a form for judging poultry; all the words necessary for a complete description of the various "points" were there, and it was only necessary to check or underline them. I have adopted this method for the physical examination of children, and the form can be secured from FARM AND FIRESIDE.

FOLLOWING the weighing and measuring, every under-weight child should have a thorough physical examination. Look the child over point by point as you would a colt. Not all the points can be judged by the parents, but many of those pertaining to growth can be spotted nearly as well by them as by a physician. Do all you can yourself, then make use of the expert here as you would in the other case in determining special needs.

The most serious physical defect you will find to be some form of obstructed breathing. This is most commonly caused by diseased adenoids or tonsils. The signs of this obstruction are parted lips, a small and nasal voice, membrane of the nose crusted or discharging mucus, projecting teeth, swollen glands, round shoulders, and habitual cough. Many an operation is necessary; be sure that it is done thoroughly. Many children come to us with the work not completed, and little better, or even worse off, than they were before the operation.

ANOTHER line of observation which the mother can follow is to examine the child's teeth, and locate and count those which are decayed.

There are many cases of ear complications which require attention. The eyes should be tested to make sure they are not causing strain which affects the child's general health. Do not omit any of the items in the examination sheet.

Every child should be "gone over" at least once a year, no matter how well he may be, but the child who is habitually seven per cent underweight for his height needs to have every defect found and removed.

There has been a great deal of speculation over the causes of underweight and malnutrition. We find poverty, riches, diseases such as syphilis and tuberculosis, insufficient and improper food, and other conditions usually named to be secondary rather than primary causes. The essential causes are: Physical defects, especially obstructed breathing; overfatigue; lack of home control; and faulty food and health habits.

It will be seen how all of these causes focus in the home; their center is at your fireside.

It is not merely a matter of unnecessary





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BRUSHING the teeth in the morning and surely at bed time, is more than a clean habit—it is a necessary protection for grown-ups and even more for children. Start your children right on the road to good health. The delicious flavor of Colgate's makes them like to clean their teeth.

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SUITS**

discomfort and unhappiness for a third or more of your children. In many cases malnutrition has gone so far that they have become the prey of other better recognized disorders. All such children start life with a handicap and under conditions which later make them misfits and failures. *The important consideration is that practically all of these children can be made well in their own homes. The remedy is the control of the causes, and it lies in your own hands!*

In one of our children's institutions, a nutrition class was formed of the most delicate children selected from a group of six hundred. These children were under control day and night, and the cause of their malnutrition was found in every case. Although in three instances there was organic disease, the entire class came up to normal weight in an average period of ten weeks.

ALTHOUGH the fact that this class was under full control gave us a certain advantage in determining the cause of their condition, all the results there accomplished can be reached in your own home if you will study the situation. Do not be discouraged if your child is 10 per cent, or even 20 per cent, under weight. It may require patience, but you need not worry once you start him gaining. What we propose is to tell you how to begin.

The real start is made when you set out to find the cause of the malnutrition, and how to get rid of it. The physical examination is the first step, and you will notice that the form provides space for the child's history as well. This record may seem unnecessary, because you think you remember perfectly everything that has happened to him since his birth. Yet when these well-known facts are written

down in order they present a significant record not realized by one who takes them one by one and unrelated.

"Before and after" pictures make an interesting part of the history. Study some of the illustrations in this series of articles, and perhaps you will like to take a snapshot at the time of the physical examination. Keep a space beside it for another to be taken after the child has come up to weight.

Be sure to put down the dates of all serious illnesses which the child has had, so that the various complications may be traced out. Try to recall any bad effects which followed measles, tonsillitis, whooping cough, or other acute diseases. Make note of periods of earache, repeated attacks of indigestion without special cause, and so forth.

Think back over his condition at various ages, and note the time when he was plump and well. Search out the circumstances which attended the beginning of his present condition. If you have any records from his infancy, look these up and add them to the present study. Be sure to consult other members of the family, for they may suggest a recollection which would otherwise escape you.

New items to add to the record will constantly be found, and you will find it an interesting game to all the family to watch the progress made. Do not worry about the matter, as that would defeat the end in view. *Just make up your mind that your child should be well, and that you are going to follow the program presented in these articles until you have made him the healthiest young animal on the farm!*

NOTE: The second article in Dr. Emerson's series will appear next month. It will deal with your child's food habits, which have such an important bearing on his or her health.

EDITOR.

The Rosary of Mr. Nimrod Briggs

[CONTINUED FROM PAGE 18]

notified. He promptly telephoned a description of the lad to all surrounding towns. We ran an account of the theft on the front page of the paper that afternoon, asking our subscribers to help apprehend the miscreant.

He was not heard from that night, nor all day Sunday.

The following Monday, about half-past twelve, old Nimrod Briggs came back early from his dinner. He went into the back room, hung his coat and hat on the hook that had held it for two decades, and sat down on his stool to read the Boston morning paper spread out before him on a type case.

He was attracted by the printer's apron he had lent the Robbins boy, hanging by the window. He was attracted by it because out of the front pocket protruded what looked like a bunch of old envelopes.

Puzzled, Nimrod went across and took them out. There were a dozen of them, frayed and soiled—common stamped post-office envelopes—which appeared to have been carried around in the lad's pocket for a year and a day. On all of them was a Baltimore postmark, and the different addresses on succeeding dates indicated the boy's search for work about the country.

Curiosity mingled with compassion for the lad's predicament, and a wonder if there was anything he could do to assist a bad situation, at last prompted Nimrod to put the letters in chronological dates according to the postmarks. Then he adjusted his spectacles and drew forth the first enclosure.

THE letter was written on cheap note paper in pencil. The mail had been carried in the boy's pocket so long that some words were almost indistinguishable. Nevertheless, Mr. Briggs made them out, letter after letter. And when he reached the last one, Mr. Briggs laid it with a slightly shaky hand upon the type case before him. He drew off his spectacles and stared straight ahead, seeing nothing.

"Poor son-of-a-gun!" he whispered.

Putting his spectacles on, he drew out again the second to the last letter he had read. And he went over again these words:

I don't believe a word you say about living in any old empty country house to save expenses. I might have believed it once, perhaps. But not after you've had such a long time as this in which to get settled. You simply don't want me with you—

"Empty country house!" echoed Nimrod Briggs. "What empty old country house is there that he could have searched out and took to living in?" Then his jaw

dropped as a recollection returned. "Could it be possible, now—could it?—that the young one found Fred Babcock's keys?"

The help came back to work at one o'clock; but, strange to record, Mr. Nimrod Briggs said nothing to anyone about the letters he had found, or the clue to the lad's possible hiding place, till the hue and cry of the felony was over. But Mr. Nimrod Briggs did his work listlessly and half-heartedly that afternoon. Many times his mind wandered away from his work; there was unutterable sadness on his face; he was given to many moments of gazing out of the window beside his type cases.

THE sun went down around four-thirty. A wind blew up and overcast the sky with clouds. Outside was a cold, raw, slushy spring night. Six o'clock came. The boys and girls laid down their work; the motor on the linotype was shut off; there was the usual jostling, joshing crowd washing up around the sink. Only, this night, all the talk was about the robbery and the whereabouts of the Robbins boy and the possibility of his ever being caught. Mr. Nimrod Briggs did not join the crowd. He bent over his type case, his face a troubled study.

Finally he went over to his boarding place and got his supper. The clouds gave down a cold, raw spring rain. Underfoot it was slushy and disagreeable. It was excellent pneumonia weather. Nevertheless, after supper, having appeared to reach a decision, he buttoned his coat around him, fortified himself with a pipe of fresh tobacco, took an umbrella, and started forth.

Down School Street he went, across Mill, over the flats—until he had left the town behind him. There were no street lights out on the North Foxboro road. The going was very bad. Yet, the worse conditions grew, the more resolute Mr. Nimrod Briggs seemed to become.

It was an eerie place—that old Stevens house—as Nimrod Briggs drew near to it in the murky darkness. He knew his location fairly well from memory—from Sunday afternoon walks when he had passed it. But to come upon it at night in the search for a young thief—it was a job for a full-sized man with strong nerves.

Mr. Nimrod Briggs entered the yard. He went up to the creaky veranda. He fumbled in his vest, found a match, struck it.

By its light he saw only the naked veranda, the closed storm doors, the drawn and fastened blinds. Leaves from the previous autumn, packed down by the winter's snows, still lay in the corners. An empty skeleton woodbine blew in the raw wind and tapped against the woodwork.



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SEND \$3.98 for shoes on arrival. If, after careful examination, you don't find them all you expect, send them back and we will return your money. Just slip them on and see if they fit the most comfortable way. Be sure to give size and width. Order No. AX18065.

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Send the Men's Work Shoes No. AX18065. I will pay \$3.98 for shoes on arrival and examine them carefully. If not satisfied, will send them back and you will refund my money.

Name.....Size.....
Address.....

Nimrod tried the door. It was locked. Quaking inside, the little man went to the front windows opening on the piazza, and tried them. Both windows were locked too. He was about to leave the piazza to try the back door, when a lull came in the wind washing through the naked limbs of the maples out by the stone wall and the road. In that silence the blood of Nimrod Briggs ran cold. For he had heard a sound—a weird wild cry. More than that, the cry came from inside that tenantless, forbidding pile above him.

With teeth a-chatter, knees quaking, the old printer waited.

It came again. It was a human voice. It was crying out a name!

Mr. Briggs waited. Then came another lull, and again the cry—clear, agonizing, hysterical:

"Mary!"
Mr. Briggs's fright abated in that moment. He picked up his fat old umbrella and, despite the darkness and the puddles, he went down over the steps and began to feel his way around to the rear of the house.

AT LENGTH he found a kitchen window that responded to his upward push, and in the dark he crawled up somehow, and went over the sill inside.

He lowered the window behind him, and listened, fearing to strike a match.

"Mary!" came a moan again—a cry of anguish, the whole trailing off into senseless babble.

"I'm right!" exulted the printer.

Mr. Briggs struck a match. The kitchen in which he stood was furnished for summer occupancy. On the shelf above the dry and rusted sink he saw a small brass lamp. He lifted it down and shook it. There was oil inside. He dabbed the flame to the wick, and with shaky hands got on the glass chimney.

Then through the strange house Mr. Briggs started on tiptoe, nerving himself before opening each door.

Outside one particular door, at last, he listened—listened to senseless, pitiful babble going on within, in the cold and the dark, and the ghostly abandonment of the place and the hour.

"Georgie!" he cried. "It's only me—Nimrod Briggs from the printing office. Don't be scared, Georgie; it's only Nimrod Briggs!"

Pushing open the door into a small bedroom, the printer peered within.

The boy lay on a sheetless bed. There were a couple of smelly old horse blankets for covering. He rolled over when Nimrod Briggs entered the spooky place, and his eyes were hard and glassy.

"It's only Mr. Nimrod Briggs," commented the boy, as if there was nothing unusual about his being there. "Good old Nimrod Briggs. Oh, I know you, Nimrod Briggs. You gave me two dollars to get some food last week. . . . Mary, this is Nimrod Briggs from the printing office."

The printer was startled. For a moment he thought there was a third person in the room. Then he went into the room and closed the door. Curtain and blinds were drawn—no one could see the light from the street; so he set down the lamp.

"I see you found Fred Babcock's keys," remarked Nimrod sociably.

"No, I didn't find 'em. Someone answered the ad and brought 'em in that next noontime, when I was in the office alone," the boy told him. "They left 'em with me to give to the bookkeeper. But I had an idea I could save money, and—and—Mary, this is Mr. Nimrod Briggs of the printing office—Nimrod Briggs I wrote you about."

"Yes, yes!" cried Nimrod nervously, striving to soothe the boy in the delirium of his fever.

NIMROD BRIGGS sat down by the sick boy's stolen bed. For a long time he sat there, only the smoky oil lamp lighting the scene.

"Was you ever in love, Mr. Briggs—in love with a girl that was sweet and pretty and good and loved you like hell in return?" demanded the boy.

Mr. Nimrod Briggs said nothing, but his withered lips closed hard.

"We was all alone in the world, Mr. Briggs, she and I," the boy went on. "I was only seventeen; she was twenty, going on twenty-one—"

"And probably twice as old and wise, for all that!" thought Mr. Nimrod Briggs to himself.

"But the difference in our ages wasn't nothin', Mr. Briggs. She loved me and I loved her. She worked in a candy factory; I worked in a newspaper office. That was while I was learning my trade. After I'd learned my trade I was going to take a job

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Sectional View of Mueller Pipeless

1 The Mueller register face is large and correctly proportioned to allow delivery of big volume of warm air slowly. This insures rapid and even distribution of heat throughout every room. A small volume of scorching hot air delivered at high speed through SMALL register always means "spotty," unsatisfactory heating.

2 Spacious and unobstructed air passages permit unrestricted air travel in furnace and withdrawal of large volume of cool air from rooms while delivering an equally large volume of warm air into them. Narrow and crooked air passages restrict withdrawal of cool air from rooms and this small volume of cool air taken into furnace becomes blistering hot and pours up through register face like a volcano.

3 The vast and scientifically designed heating surface of the Mueller is shaped and proportioned to make every inch effective. This means full benefit from any fuel burned and big fuel saving. Improperly designed heating surface with small area requires hard firing to obtain sufficient heat which results in over-heated castings and great fuel waste.



Install Your Mueller Now

Be sure of a warm home this winter and all winters to come by installing your Mueller now. It will pay for itself quickly in fuel saving alone—give you a lifetime of faithful service. There's a Mueller size for any home, church or store building. It can be installed in a day; no cellar too small, no pipes or heat in cellar. Will burn any kind of fuel.

L. J. Mueller Furnace Co.

Makers of Heating Systems of All Types Since 1857

236 Reed St.

Milwaukee, Wis.

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Furnace Co.
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Gentlemen:— I am interested in a better heating system. Without obligation on my part, please send me your free booklet and complete information about the Mueller Pipeless Furnace. F.F. 3

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The Beauties of Autumn

Now that you spend more time indoors, make the home more attractive. Well kept furniture is indoor's greatest attraction.

O-Cedar beautifies—first by removing all dust, scum and unseemly dirt from the woodwork—and then imparting a high, dry, lasting lustre that neither gets gummy or sticky, nor collects dust.

O-Cedar Polish

"Cleans as it Polishes"

30c to \$3 Sizes—at All Dealers

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New Oliver Typewriters For \$64

No need now to be without a typewriter on the farm. A genuine \$100 Oliver, brand new, for only \$64. Our terms are only \$4 per month. Free trial—no money down. Typing is easy to learn. Our new book, "The Typewriter on the Farm," explains all its uses. Get this book now. A copy sent free upon request, together with beautiful catalog. Write today. Then, if you wish, you can ask for a free trial Oliver.

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To try in your home 30 days free no matter where you live. Show your friends, send it back at our expense if you do not want to keep it. Million members of families enjoying the comforts and pleasures of "Hoosier" Stoves & Ranges, perfect bakers and heaters, beautifully finished, smooth, latest design, guaranteed for years.

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made to your own measure. It won't cost you one single cent. We will give it to you so you can show it to your friends. It will be a big advertisement for us. You can easily make from

\$35 to \$50 EXTRA Every Week

and besides that be the best dressed man in your town. It's an opportunity you cannot afford to overlook. Even if you only want to order a suit for yourself, don't fail to

Write For Our Big Offer

Don't delay a minute. Drop us a line or send us your name on a postcard, and we will send you absolutely free, our wonderful style book, containing 64 beautiful samples to choose from. Write now.

The Progress Tailoring Co., Dept. 501 Chicago

somewhere at man's wages, and send for her."

Mr. Nimrod Briggs nodded. "The night before I came to go away, we took a long walk, Mr. Briggs. We came to the edge of the bay across from the city. It was a sort of misty evening, Mr. Briggs. The whole world was raw and cold and lonesome; and we looked at the lights of the city across the water, and it seemed as if it was us two against the whole world. There was nobody to mind, nobody to care. I was afraid of the morning, and the weeks that were coming. I said, 'Mary, let's get married to-night; and when I've landed that job up in New England that's advertised in the trade paper, I'll send for you—'"

"You didn't have the money to take her with you then?" asked Nimrod.

"No; I didn't have the money, only to pay the minister and the license, and my railroad fare to the job. And I married her that night—oh, Gawd, it seems years ago, and it was all over so soon, I was frightened!"

"And yet, it was bindin'—bindin' for life, bindin' as they make 'em, son."

"I went away and I took the job, Mr. Briggs. You understand how it is. They thought I was a man, from my letters; and when they saw I was only seventeen and young, they refused to give me the wages."

"And your wife kept writin', wantin' to know why you didn't send her the money to join you—"

"That's it, Mr. Briggs. And she was afraid to leave her job in the factory, for fear she might not get another and I'd be burdened with two of us to support."

Nimrod Briggs thought of the long, closely written letters, full of love and endearment and youthful hope and pitiful aspiration, which had been the first he had read that afternoon. Then he thought how they had dwindled. But the boy was going on again:

"I tried to make her understand, Mr. Briggs. But she said I'd stopped lovin' her. She said I was spendin' my wages on myself—that she'd ruined her life marryin' me on impulse, and I didn't never intend to send for her."

"I understand, bub," said Nimrod Briggs. "I understand."

"I worked hard—Gawd, how hard I tried!—with my eye botherin' me more and more all the time."

Nimrod Briggs sat stiffly, with his chubby hands on his seedy little knees, his gaze far away. Even if the boy had received a man's pay, when divided by two and the young wife's share sent to help out with her bills when she finally became incapacitated for factory work because of her young motherhood, there would have been little enough left for the fare to bring her to him and to furnish a home.

"But, every week, I sent her all I could possibly spare," the boy raved on. "I tried to get 'em to raise my pay, but they never could understand. I was getting as much as most boys of my age, and why shouldn't I be satisfied? I tried to tell 'em about my wife and the baby; but they laughed at me."

"So I got another job, and another; but it was always the same. I had a man's expenses, but they would never pay me more'n a boy's wages, never mind how hard I worked. And my eye going worse and worse all the time."

NIMROD thought of the hard, strange ring he had detected in the last two or three of the boy's letters in his pocket. "Why didn't the boy want his wife and baby up there with him?"—in a score of places between the lines sounded the distraught woman's query. And Nimrod saw that the boy had not told her all of his poor luck, of the injustice of his wages, of his trampings across country to get the better job and find a way out, with his heart a leaden thing within him. Finally he remembered the ultimatum in the last letter he had read—the letter the boy must

have received while working at the "Telegraph" office: The doctor from the Institution had said it was only a question of time; the little son's death might be averted if certain things, all costing money, were provided, or if the wife and baby were up there with the husband.

"And you stole Sam's pay roll to save your child's life?" suggested Mr. Briggs.

"There wasn't any other way," replied the boy.

"Where's the money?"

"I mailed it to her Saturday noon a few minutes after I took it. I wish I could die!" moaned the boy. "I'm only standin' in her way. Maybe, with me gone, she could marry someone else who'd take care of her—and the baby. She's pretty; she could get married again."

The house was cold and dark and silent. The flame in the lamp quivered and at times burned blue. Outside, the wind washed with melancholy monotony through the trees and shrubbery.

"Oh, Gawd, if I'd only had a chance!" cried the boy. "I'm not a crook. But there never was no one to help me—and my eye going bad all the time! I'm at the end o' my rope."

MAN is not the creature of circumstances. Circumstances are the creatures of men.—DISRAELI.

Mr. Nimrod Briggs sat staring blankly at the wall beyond the boy's bed. On the cot the boy groaned with the pain in his body and his heart—the father who was too young to be entitled to a baby, a baby he had never seen.

Did it come to Mr. Nimrod Briggs' father heart in that moment—a heart stunted and disappointed by his years of bachelor existence—the agony and worry and tragedy in the heart of the boy? Did he read into the boy's story any of his own experiences? Perhaps. What could it have been that made Mr. Nimrod Briggs sit so silently by the strange bed of illness, with the stark sorrow in his hazy old eyes, and never mind the cold, or the ghostly noises of the old ark, or the weird oil lamp that at times burned blue?

IT MUST have been toward four o'clock in the morning, a raw, dank dawn, that the boy on the bed awoke to find the oil lamp still burning and the old man sitting like a faithful sentinel beside the bed.

"Sonny," said the old printer, "you can't stay here; it ain't your house, and someone might come any time. You got to spruce up somehow and try to walk. You got to lemme help you get back to town."

The boy was a bit more sane than he had been a few hours before.

"I stole money," he said in a strange, hollow voice. "I'm a thief, and they're after me. It's better that I die—"

"No, no, sonny; no, it ain't," declared the other; "Nimrod Briggs, he'll make it all right. You trust Nimrod Briggs. See if you can stand, sonny. Nimrod Briggs will help you up and back to town. For you've got to go back."

Though the boy was inclined to trust him, it was a long time before he was persuaded. He tried to stand. But he was dizzy and weak. He sank back.

"Let Nimrod Briggs help you, son. There, put your arm around my shoulders—so!"

"We can go out through the front door; I got the key," said the boy miserably. "Oh, well, I'll go back and give myself up I guess. I suppose it's right I should."

"Nimrod Briggs will fix it, sonny. Trust old Nimrod Briggs to fix it!"

"Do you really mean it?" demanded the boy. "You ain't kiddin' me, are you? Oh, Gawd, you ain't kiddin' me?"

"Nimrod Briggs never kids, son; Nimrod Briggs never kids!"

He reached down for the lamp, supporting the boy with the other hand, and together the strange pair made their way out toward the front door.

"Where you takin' me?" asked the boy piteously, when they finally reached the road—as if it had just penetrated his feverish consciousness that he was out of the house.

"I'm takin' you to Nimrod Briggs's room at the boardin' house, sonny. You just trust old Nimrod Briggs!"

With the boy's arm around his hunched and bowed old shoulders, supporting half his weight and guiding his flagging footsteps, the little old man with his strange burden headed toward town.

THEY came up Main Street in the silent dawn. They met no one. The boy had become more and more ill with the exertion. But, for that matter, so was Mr. Nimrod Briggs very nearly exhausted with the unusual effort, the exposure, and the nerve-racking ordeal of the night. But the little man had his mind made up, set on realizing his purpose, and there was no turning back or giving up.

He took the lad into the boarding house just as the widow was rising to prepare early breakfast.

"I hardly know which o' the two of us is the sickest, him or me," he said, with an attempt at a smile, as motherly Mrs. Mathers, with exclamation of amazement and pity, helped him to get the almost unconscious lad to bed.

"You call Doctor Johnson, Mis' Mathers," ordered Nimrod. "Me—I'm goin' up right away to see Sam Hod."

He got Sam out of bed and made him come down. The editor flung a bathrobe over his night shirt, and faced Mr. Nimrod Briggs across the table of his chilly dining-room.

Mr. Nimrod Briggs took a fat little wallet—fat like himself, yet frayed and battered with life like himself too—from his coat pocket. He counted out nine ten-dollar bills and shoved them across to Sam. And there were more bills in the fat wallet even with the ninety dollars gone.

"What's this?" demanded Sam. He was not fully awake.

"It's your pay roll, Hod. I made the boy give it back," announced Mr. Briggs stoically. "He's given it back; he's restored your money; now you can't hold him any longer or prosecute him—"

And Nimrod told of where the lad had been found.

"Yes, I can," declared Sam. "Even if he gave it back, the fact remains that he committed a felony—"

"No, no, Sam Hod; you won't prosecute him!"

"Why won't I, Nimrod Briggs?"

"Prosecute him, Samuel Hod, and I—I—I quit you cold!"

Sam smiled weakly. Finally he said: "Of course if you feel that way about it, Nim, I'll take the money—"

"And you'll take the boy back?"

"Oh, no! I couldn't do that!"

"Then I quit—I quit you cold, Samuel Hod! I quit you cold!"

"But, Nimrod—"

"I ain't much use in this world, Mr. Hod. I won't never set the world on fire—now. All my life lies in the past. Ain't got no kith nor kin. I saved a little money, and I might as well use it to help someone else make a success of his life, if I ain't made much of a success of my own."

SAM was fully awake now, and staring speechlessly at his old employee.

"I'm goin' to send for his wife and baby, Samuel Hod. I'm goin' to loan him the money to furnish a little house. Then, if it doesn't cost too much, I'm going to send him away and see if the city doctors can't take that film off his eye. When he comes back, Samuel Hod, I want you should give him a regular job in the ad alley—not a boy's job, but a man's job at man's wages."

Then, to Sam's questions, Mr. Nimrod





*"Sure —
I Got 'Em All!"*

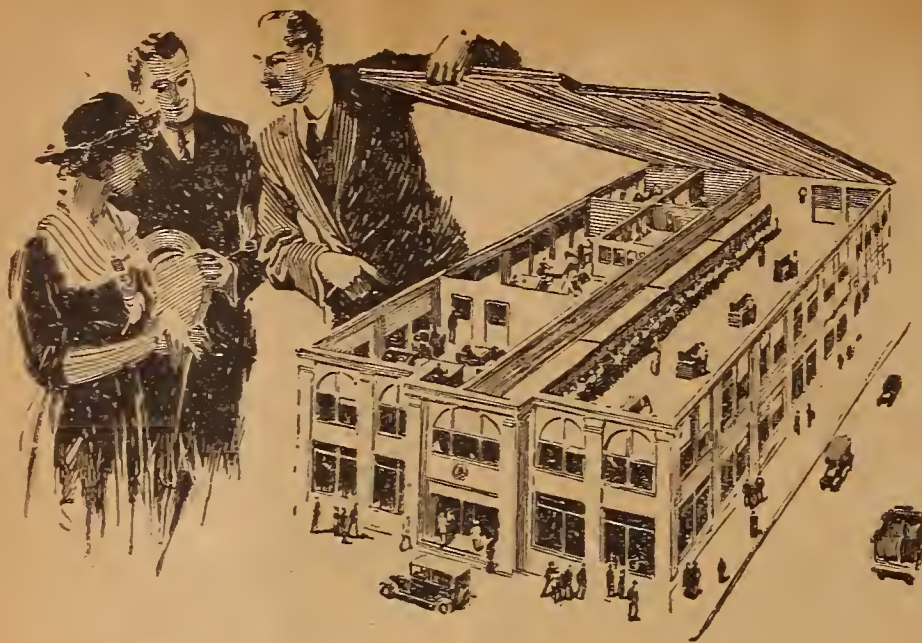
IN well stocked kitchens you'll usually find every member of Pillsbury's Family of Foods. Be sure that you have them all.

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The Public Confidence

An important part of the management of the Bell System is to keep the public informed concerning all matters relating to the telephone.

We consider this an essential part of our stewardship in the operation of this public utility. It is due not only the 130,000 shareholders, but it is due the whole citizenship of the country.

We have told you of new inventions to improve service, of the growth of service, of problems involved in securing materials, employing and training workers, of financing new developments, and of rates necessary to maintain service.

You have been taken into our confidence as to what we are do-

ing, how we do it, why we do it. You have been told of our efforts to meet unusual conditions; of how we have bent every energy to provide service in the face of storms, floods, fires.

It is an enormous task today to provide adequate service in the face of shortage of workers, raw materials, manufacturing production and transportation.

Nevertheless the service of the Bell System has been improved and extended this year. Over 350,000 new stations have been put into operation. And the loyal workers of the Bell System are establishing new records for efficiency and will establish new records for service.



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One Policy One System Universal Service

DRY YOUR FRUIT

and Vegetables by steam in two hours on the "Granger" Evaporator. Cheaper than canning—No jars—No sugar—Less work—No loss—Cost \$6.00 up. Send for catalog L. EASTERN MFG. CO. 269 S. 4th St. PHILA., PA.

IF YOU WANT TO SELL OR EXCHANGE your farm, city property, land or patent, no matter where located, write me. John J. Black, 71 St., Chippewa Falls, Wis.

Several Hundred Ohio Farms For Sale

WE are offering several hundred of the best farms in Ohio at prices that are low in comparison to the value of the property and the income assured purchasers.

These farms are a part of the Miami Conservancy District, which is a political subdivision of the State of Ohio, and represent a surplus acreage that we own in the Miami Valley.

Rich silt loam top-soil deposits make this land very productive—practically inexhaustible.

It is our earnest desire to bring more good farmers to this community, which lies within a thirty mile radius of Dayton. Quick markets are available by rail, interurban and highway.

We Would Like to Send You Booklets Giving Detailed Information. Just Address "Farm Division"

THE MIAMI CONSERVANCY DISTRICT
DAYTON, OHIO

Briggs told the Robbins boy's story, producing the pitiful letters in proof, and concluded:

"You see, it's this way, Sam Hod: I'm old and played out, and my life's gone. I'm nothing but an old tramp printer who's wasted his substance in riotous livin'. I've figgered it out, as I sat by his bed this night, that it's a sort of duty I owe the old world somehow to take a youngster like him under my wing and make a man of him, to take my place—only a better place—when I am gone. That's what I'm up to, Samuel Hod, and I—I ask you very sincerely—not to hinder me in my duty now!"

"All right, Nim. If that's the way you feel about it," replied Sam, "O' course I'm not one to stand in your way!"

Well, the next morning the charge against the Robbins boy was withdrawn. He had a good room in Mrs. Mathers' house. The news that his wife and a baby would be with him by the end of the week was greater than any physician's medicines. He began to mend.

And the next Saturday, on Nimrod's money, the boy's wife arrived.

Nimrod Briggs rented the furnished bungalow belonging to Fred Osgood on Cedar Street, and had it ready for them that Saturday night.

The girl got off the train with the baby in her arms. She was an emaciated girl, pretty in a pale, starved way, and her baby showed the effects of poverty and malnutrition. But you'd have thought that the little red weazened-up thing was worth five hundred or a thousand dollars, the way the half-blind Robbins boy handled it.

MR. NIMROD BRIGGS saw them safely in the bungalow, and then he fled. He left them to their child and their reunion and their explanations.

"I got to hustle back to the office and set an ad," he fibbed.

Mr. Nimrod Briggs went home in the early evening to his boarding place. Slowly he mounted the steep, narrow, creaking stairs and opened the door into his stuffy little chamber.

Having reached his room at last, he paused as if at a loss to know just why he had come. It was easy to see that his thoughts were far away. Finally he sat down on the edge of the bed, he took off his dented derby hat and laid it beside him. With his lips shut very tightly, the far-away look still in his eyes, he fell to picking

aimlessly at the calloused spots on his palms.

After a while even the motion of his fingers was suspended. The room grew dreamy and husky. He was little more than a silhouette in the curtained darkness.

Finally there came a sigh. It was not a sigh of relief. It was a long-drawn sigh that quivered with pain. He moved across the room to a cluttered closet beside the chimney, and he felt around until he located an out-of-date telescope valise. Then he went slowly back across the room to the west window, and ran the curtain to the top, so that all the light possible from the after-glow of the sunset might illumine that which he held in his hands. Mr. Nimrod Briggs untied the little parcel.

THEY were letters—letters bedimmed by the musty hand of time. One by one he opened and read them. And in so doing, as he had done on countless other nights in years gone by, he counted his rosary—the rosary that prompted him to interest himself in the affairs of the little Robbins family.

Mr. Nimrod Briggs still works in our office. Over and over again he sets the ads for Ben Williams' clothing store, for Wil Seaver the grocer, for Joe Price's picture show and the Morgan Bargain Store and the Beehive Store and the Bon-Ton Millinery. He never makes any protest about his wages; he never refuses to work overtime when the holiday business is heavy. He is as faithful as our old drum press, and so long as we have the tried and true combination of the old press and Nimrod Briggs, we can always be certain of getting out a paper.

But down in Boston, now, there is a young man with a good pair of eyes, a commendable ambition, a resolute determination to make good the old printer's confidence in him. Yesterday Mr. Nimrod Briggs, having taken his cob pipe from his withered lips, removed his spectacles, and washed up at our sloppy old sink in the corner, remarked from force of habit, as he was rolling down his sleeves at the close of another week's work:

"Well, I ain't always goin' to do this. Some day I'm going to take a trip around the wor—"

But he stopped in the middle of a word. Then he added:

"Oh, well, it really don't matter! The part I wanted to see has been shot all to pieces by this time, anyhow!"

How Jackson County Saved \$15,000

THE farmers of Jackson County, Oregon, saved between \$15,000 and \$20,000 the first six months of operation of their Farm Bureau Exchange. They are now planning to increase the commodities handled, and to take in territory in two adjacent counties—Douglas and Josephine.

The organization of the exchange was the result of gradual cooperative evolution on the part of Jackson County farmers. Through their Farm Bureau they had conclusively demonstrated that sulphur on alfalfa land paid big dividends; that superphosphate had its uses in the county; that sodium nitrate was profitable on the orchards; and that the fruit districts could profitably diversify their agriculture to a considerable extent by the keeping of livestock.

Upon decision to make these beneficial practices of general application to the county, it was found that prices on sulphur ranged from \$90 to \$100 per ton for large shipments, and as high as \$112 per ton for less than ton lots. It was also determined that the profits of livestock-raising were largely absorbed by the margins extracted by local livestock buyers. Further investigation brought out the fact that prices on nitrate and superphosphate were prohibitive.

The situation was acute. Farmers had learned what to do, but how were they to do it? The executive committee of the Farm Bureau took up the matter. It was

at first suggested that the Farm Bureau incorporate and do a purchasing and sales business. This plan had many advocates for a time, but gradually it developed in the opinions of Farm Bureau members that many of the excellent phases of their work would be endangered by such a plan.

It was finally decided to organize the Jackson County Farm Bureau Exchange, incorporate it under the laws of Oregon, and to limit the business done to members of the Jackson County Farm Bureau. This was done, and a manager secured. Nine carloads of sulphur were purchased at \$47 a ton; \$30 per ton was saved on large shipments of sodium nitrate. Twenty-three carloads of cattle, sheep and hogs were shipped cooperatively to Portland. Savings ranged from \$10 to \$30 per head on cattle, and in corresponding ratio on hogs and sheep.

Business was largely confined to the items outlined although a few purchases of salt and spray materials were made. The success of the plan induced the farmers in Douglas and Josephine County Farm Bureaus to join the Jackson County Exchange, which is now handling car-lot shipments of needed materials for farmers of the three counties.

County Agent C. C. Cate and Roland Flaherty, formerly secretary of the Jackson County Farm Bureau and now manager of the Exchange, have been the leaders in the development of the plans. F. L. BALLARD.



WINCHESTER

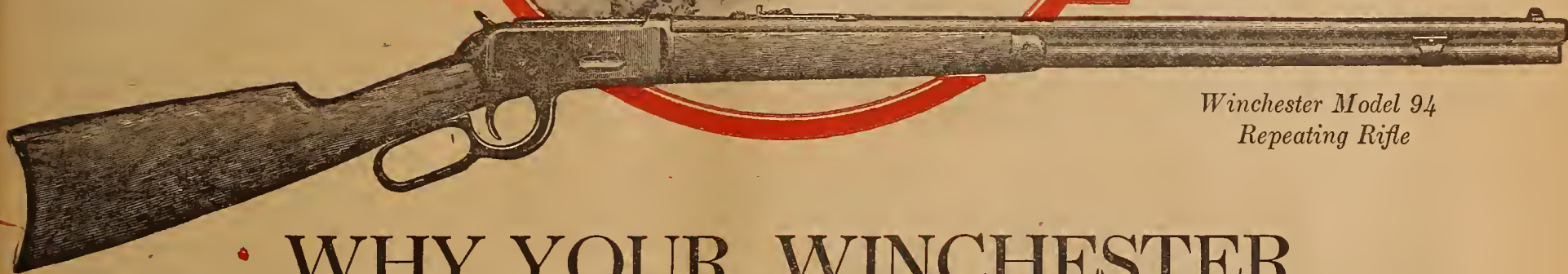
1866

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.30 Winchester
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Winchester Model 94
Repeating Rifle

WHY YOUR WINCHESTER GETS GAME

BEFORE you are permitted to purchase and fire it, your Winchester Rifle is tested more severely than most hunters realize.


As soon as it is bored, the barrel must pass the Provisional Proof Test, in which a powder charge two or three times the normal strength drives a bullet one-third heavier than that which is standard.

This test proves that the steel can stand more than the strain of the regular load.

Smoothness, rapidity, and certainty of loading, firing and ejecting, are tested just as rigidly, with standard ammunition. The rifle is worked and fired both slowly and rapidly by an expert trained to detect any fault: It must perform perfectly or it is rejected.

Then the Definitive Proof Test, which is officially accepted by the British Government in lieu of any other test, is applied. In this test your Winchester fires a charge 25 to 40 per cent. in excess of the normal one.

After all these shooting tests, ranging up to hundreds of shots, your Winchester goes to the range for actual target shooting, where the sights are correctly set and accuracy at distances up to 200 yards is proved. Here again the most exact requirements must be met.

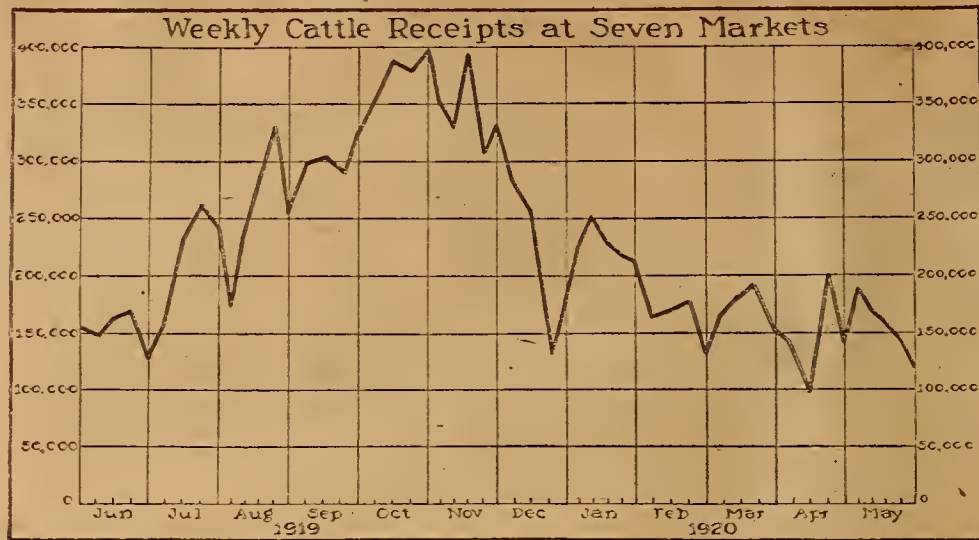
The rifle which has passed these rigorous trials deserves the highest mark in the gift of a supergunsmith, and this is it:  You will find it on every Winchester barrel and receiver—the proof mark of *dependability*.

Think what it means to you to have this Winchester proof mark on your rifle in that critical moment when game is either to be bagged or lost. To have a rifle which *you know is more than equal to its task*.

Whether your game be squirrels or moose, woodchucks or grizzly bears, coyotes or caribou, white-tail deer or big-horn sheep, there's a tested Winchester for your use which you can trust.

In deer rifles the variety is abundant—a half dozen different models, each made in various styles and suitable calibers. If you have no preference, we suggest the popular Model 94, shown above, of .30, .32 W. S., 32-40, or .38-55 caliber.

Consult your local hardware or sporting goods dealer. If he does not tell you all you wish to know, write to us for detailed information, including the best Winchester Ammunition to use. Mention the kind of game you are interested in.



No wonder prices fluctuate!

Swift & Company has to buy cattle in accordance with the number shipped to market rather than as the company's convenience might dictate.

For example, the weekly receipts of cattle at seven principal markets during May, 1920, varied as follows:

For the week ending May 1st	139,000 head
May 8th	188,000 head
May 15th	169,000 head
May 22nd	158,000 head
May 29th	140,000 head

Here was a weekly fluctuation of nearly 50,000 head!

Similar variations occurred during other months.

These fluctuations were not a matter of choice to Swift & Company. We prefer a steady volume. We would like to buy only enough to

meet the current demand for products, as other businesses can, and do. But we cannot limit ourselves that way.

Varying numbers of cattle were shipped during these periods. We had to buy them because they were on the market.

Having bought them, Swift & Company had to find a market for the meat.

Changes in supply of animals as well as changes in demand for meat necessarily cause price fluctuations.

We don't like sudden price changes any better than the producer does. Our ability to handle and market varying quantities makes these price changes less severe than they would otherwise be.

Swift & Company, U.S.A.

Founded 1868

A nation-wide organization owned by more than 35,000 shareholders



There's Money for You in Feeding Lambs

[CONTINUED FROM PAGE 14]

In the winter of 1918 and 1919 the feeder after being burnt the preceding winter stayed out of the feeding business, and here is what resulted: When fat lambs were selling at 16 cents, feeding lambs could have been bought at 12½ to 13 cents, and when brought back to the market would have sold for 20 cents, leaving a margin of \$7.50 per hundred.

But the reader says, "Feed was higher. That is true, but while my feeding cost me three cents a head per day, with this wide range it could have been covered easily at eight cents per day, and you must bear in mind that when your lambs are selling at high price you get more for your gains. An illustration: A 60-pound lamb at nine cents a pound, selling at ten cents and making a 25-pound gain, gives you 60 cent profit on the original 60 pounds, and \$2.50 on the 25 pounds, giving you \$3.10 to cover feeding expenses. Taking this same lamb at 13 cents, and selling at 20 cents, you have \$4.20 on the original lamb and \$5.00 on the gain in weight, or a total of \$9.20 to stand feeding expenses against \$3.10 with cheaper prices. Thus, with high feed the contingency is met by the wider range in prices.

Climate and custom govern production of lambs. The consumer can get lamb meat the year round for this reason: In Tennessee, West Virginia, Virginia, Maryland, and Southern States the lamb is born in December and marketed in April and May. In Kentucky, Illinois, Indiana, Missouri, and Ohio the lamb is born in January and February and marketed in June, July and August. In Iowa, Kansas, Nebraska, the Dakotas, Michigan, Wisconsin, and Eastern States the lamb is born in March and April and marketed in August, September and October. In Western States the lamb is born from the middle of April to the middle of May, and goes into feed lots from the first of September to the first of March being fed out at different times, and put on the market, fat, from December to May thus giving the consumer choice lamb every month in the year.

She's a Milk Cow

OFFICIALLY speaking, your dairy pet is a "milk" cow, not a "milch" cow. A controversy on which of the two is correct was recently terminated in the U. S. Department of Agriculture with the result that the term "milk" cow was given official recognition.

Things I Have Learned from 25 Years as a Fruit Grower

[CONTINUED FROM PAGE 13]

undertaking—so much less frequently losing fight. Tillage is no longer a losing struggle against weeds. Tillage has taken on a new meaning, and the eradication of weeds is not considered for a moment. It is altogether possible that spraying may advance to the same ground, or go beyond it, even.

Our present pruning systems, if we may call our present practice a system at all, leave much to be desired. Indeed, we have probably made less improvement in methods of pruning than in any other branch of fruit-growing. This leaves us a capital opportunity for the future.

Our present marketing machinery is recognized as being cumbersome and inefficient. There is too much of it. And this machinery keeps crowding in between the fruit grower and the eventual consumer instead of bringing these two citizens nearer together. We all know that method of marketing ought to be improved.

And thus, taking things all in all, we feel pretty well, thank you, and happy and hopeful. Old Mr. Pomology holds the world by the taproot, with a down-hill pull to his tractor; and if he doesn't lift some big things out of the future it will be because Congress and the Bolsheviks and the I. W. W. and the Confederated Order of Nuts get there first. Of course, if they wreck civilization, submerge society, abolish science, engulf humanity, and explode this spheroid on which we live, our dream will have a sorry awakening; but short of that we are going to show this well-known human race something new about fruit growing within the next quarter century and I am just hoping to be on hand in 1940 to help cast up the accounts.

5 hours blasting does more than 12 days digging and burning

Consider the experience of J. E. Downard, Fort McCoy, Florida, who tried both methods:

"I worked ten days and got out twelve stumps. Then I tried explosives. In forty minutes with Atlas Powder I removed a pine tree 3½ feet through and broke it up so it was easily handled. With \$5 worth of powder one man can remove more stumps in five hours than he could dig and burn in twelve days."

Our book, "Better Farming with Atlas Farm Powder," tells everything one should know in order to use Atlas Farm Powder for stump blasting, tree planting, ditching, etc. Write today for a free copy.

ATLAS POWDER COMPANY, Division FF13, Philadelphia, Penna.
Dealers everywhere Magazine near you

Atlas Farm Powder
THE SAFEST EXPLOSIVE

Ditch Before Winter Rains

Protect your soil and your next year crop profits against injury by excessive water standing on land all winter. Can work land earlier in spring. Add 2 to 3 weeks to growing season. Do farm terracing now. Get

THE Martin Farm Ditcher, Terracer & Road Grader

All-steel, adjustable, reversible; no wheels, levers or cogs to get out of fix. Cuts new farm ditches or cleans old ones to 4 feet deep; builds farm terraces, dikes and levees; grades roads. Does the work of 100 men. Every farm needs one. Send your name for Free Book and Special Introductory Offer.

Owensboro Ditcher & Grader Company, Inc.
Box 511 Owensboro, Ky.

10 Days' Free Trial

[CONTINUED FROM PAGE 20]

When the war came he joined the navy. That anxious time over, he returned, and married the girl he loved. "Dad," he said simply, "I'd like to work the old place." So our partnership has become a permanent feature in our lives.

Teach your boy to work and be proud of results. Teach him to bear responsibility and enjoy it. Teach him to love the country and the freedom of the great outdoors. Make him your partner, and you will be richly repaid.

Fourth Prize

Winner: H. E. Smith

Travel Brook Farm, Drewry's Bluff, Virginia

WHEN my oldest boy was very small, I suppose I did as nearly all men do—dugl'd him in everything he wanted that could afford, till I saw it was best for his ture welfare that *he* make some effort to alize his wishes.

His early wish was a certain pig from a large litter. I granted his request on conditions to be complied with in a stated time. He failed to comply, and he also failed to get the pig, which hurt me as much as it did him. Next was a request for a few rows of peanuts. This was also granted conditionally. He complied, and we both enjoyed the reward. From then on it was easy. He learned that he must do his part, and that if he did the reward was sure.

This encouraged him, and he has had membership in one or more boys' agricultural clubs till now, always receiving the proceeds of his corn, peanuts, pig, or any other effort he made. I have induced him to save a part of his money, and he is glad to do so. When the opportunity came to buy bonds, he proudly did his part.

I have instructed him in business affairs, including banking, and if he made a mistake I only pointed out his mistake in a certain way, and he doesn't make the same mistake twice. During the war-work and high-price period, and with a camp near by, he stuck to the farm, while his comrades rushed off in doubtful company after the free-flowing dollars and to contract the spending habit. My boy is now near the end of his first year at the state agricultural college, and writes me to try to keep the work up till he gets home.

My rule has been kindness, compensation in the form of the crop or stock he produced, and the best educational advantage could give. I insist on absolute honesty and honor in his dealings, and set the same example for him.

This has worked so well with this boy at I am using the same treatment on another, four years younger, with apparently good results.

How 142 Iowa Farmers Live

DRANGE TOWNSHIP, in Blackhawk County, Iowa, has risen into nationwide fame. And no wonder! Look at the comforts, conveniences, and luxuries in the 42 homes of this country township. Run your eye down the record, and see if your own neighborhood can match it.

142 farm homes in the township.
142 with newspapers and magazines.
125 with libraries—average volumes in owners' homes, 106; in tenant homes, 95.
132 with telephones.
80 with pianos.
79 with automobiles.
76 with vacuum carpet sweepers.
76 with gas or oil stoves.
72 with furnace heat.
68 with power washers.
63 with gas or electric lights.
57 with running water piped in.
55 with refrigerators.
47 with bathrooms.
45 with open-air sleeping porches.
36 with gas or electric irons.
34 with indoor toilets.

Here are labor-saving devices, comforts, conveniences, and luxuries in country homes in lavish abundance.

Well-equipped country homes, attractive, efficient, satisfying, and wholesome—country homes functioning on the highest possible levels—are a foundational necessity in America and in every other land and country. Such homes solve a full score of the difficult problems that confront this nation in the days at hand and ahead.



International Farm Machine Headquarters

TODAY the country roads lead from millions of farm homes to the establishments of the International Dealers—and back again to the fields. Quality machines, fair dealing, and a matchless service policy form a triple foundation that has made the store of the International Dealer an *essential* institution in any community. Choose your farm equipment there—and *standardize* your machines as you would your cattle, hogs, and poultry. This is the safe course, with many benefits. Then you may take quality and efficiency for granted and rely on your dealer and on us for service and help at any time, in any emergency. The International Dealer will help you stock your farm with thoroughbred machines.

INTERNATIONAL HARVESTER COMPANY

CHICAGO OF AMERICA USA
(INCORPORATED)

92 BRANCH HOUSES IN THE UNITED STATES



"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Sidings, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made.

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
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Free Catalog in colors explains how you can save money on Farm Truck or Road Wagons, also steel or wood wheels to fit any running gear. Send for it today.



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Use!**

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operates. Just a few pounds on the handle means tons on the stump. When stump starts to come the stump, rats and other animals can't pull. Operates on wonderful leverage principle. One man alone handles and comes the stump. Operates on other machine like it. Send for most valuable Stump Puller Book ever published. Pictures, prices, terms, etc. Free. Write for it. **W. J. KIRSTIN CO.** One-man style of HORSE POWER, all sizes. 3-year guarantee with each machine. Shipment from nearest distributing point saves time and freight. Low prices now. **W. J. KIRSTIN CO., 1996 Lud Street, Escanaba, Mich.**

You can be quickly cured, if you

STAMMER

Send 10 cents coin or stamps for 70-page book on Stammering and Stuttering, "Its Cause and Cure." It tells how I cured myself after stammering for 20 years.
Benjamin N. Boone, 1361 Boone Building, Indianapolis

One Man Alone Handles Biggest Stumps!

To prove the Kirstin is the most powerful, speedy, and efficient Stump Puller, we will ship you any size or atyle on 30 Days' Free Trial. Send no money. When Puller comes, try it on your own atumps—give it every severe test—let it prove that it will tickle. If satisfied, keep Puller. If not pleased, risk a penny. Four easy ways to pay.

Kirstin ONE-MAN Stump Puller

**Quick Shipment
From
Escanaba, Mich.
Atlanta, Ga.
Portland, Ore.
Soo, Canada**



On Every Hand!

EVERY living man and woman with hands should own at least one pair of Boss Work Gloves.

They protect from dirt, dust, grease, and many minor injuries.

In spite of their sturdy, wear-well texture and construction Boss Gloves are not clumsy. They allow you the free "feel" of your work.

And there is no end to their usefulness. And they are so economically priced that everyone can afford them.

The mechanic or teamster at his work, the housewife at hers—men, women, girls, boys, everybody, everywhere need Boss Work Gloves.

Keep a pair handy and slip them on whenever you work with your hands—even in doing the little odd jobs about the house such as tending the furnace, beating the rugs, taking down the screens, working in the garden, changing a tire, cutting the grass or making ice cream.

Boss Work Gloves are made with band, ribbed, and gauntlet wrists. Sizes for men, women, boys and girls in varying weights to suit every conceivable requirement.

THE BOSS MEEDY—The world's favorite work glove for odd jobs around the house and garden, and all light hand-work. Made of the best quality, medium weight cotton flannel.

THE BOSS HEVY—The best bet for all work that requires a strong, wear-resisting glove. Made of the very best quality, heavy weight cotton flannel.

THE BOSS XTRA HEVY—The world's champion heavyweight handwear for rough work. Made of the finest grade of extra heavy cotton flannel.

THE BOSS WALLOPER—This is the super work glove. Strong, flexible and built for rugged work. Made of the highest quality, heaviest weight cotton flannel.

This Trade-mark identifies genuine Boss Work Gloves. Be sure it is on every pair you buy.



The Boss line includes highest quality leather-palm, jersey, ticking, and cotton flannel gloves and mittens.

THE BOSS MANUFACTURING CO.
Kewanee, Ill.



You Can Have a Reference Library of Your Own

By W. A. Sumner



By filing your bulletins and clippings in cases as shown above you will have them on hand for ready reference

CIRCULARS, leaflets, bulletins, and publications of all kinds, containing valuable information come to most farm homes, in great numbers.

"How can I keep this material so that it will be accessible when I want it?" is a question you have probably asked. Usually the booklet on potato diseases, or the treatment of milk fever or abortion, or on any one of a thousand subjects, is left on the reading table, and eventually finds its way into the waste-paper basket. This material is decidedly worth keeping, and is really very easily cared for.

A simple set of filing boxes solves the problem. They can be purchased ready for use in most cities, but sometimes not in the smaller towns. They can easily be made at home, with very little trouble and practically no expense.

Here are the directions:

A piece of cardboard, 11 by 18½ inches, is needed for each box. Mark it off according to the lengths given on the drawing. Cut off the corners, A, B, and C. Then cut the cardboard one third through on the dotted lines, and bend away from the cut. Paste or glue strips of cotton cloth over the edges to hold the box firmly together. Labels should be pasted on the front of the boxes to indicate the contents.

A practical list of subjects is as follows: Buildings, Cattle, Feeding Stuffs, Fertilizers, Field Crops, Fruits, Horses, Insects, Machinery, Sheep, Soils, Swine, Spraying, Vegetables and Garden, and Miscellaneous.

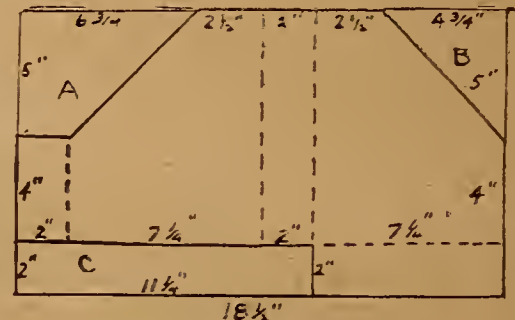
Other boxes can be used for other subjects, such as, Drainage Systems, Marketing, Good Roads, Rural Schools, Cooperative Enterprises, etc.

When the material outgrows the more boxes can be added, and the subject may be subdivided.

Clippings from the favorite farm paper can also be kept in the files. They are most conveniently handled if kept in strong envelopes.

The various state experiment stations, large agricultural manufacturing companies, the U. S. Department of Agriculture, and many other organizations issue valuable publications and bulletins which you can receive by asking them to put your name on the mailing list.

Files of pamphlet material kept on top of the farm desk will soon grow into a most valuable farm library, and will be found an invaluable part of the farm equipment.



The diagram shows how to make the filing cases shown above

Soy-Bean-and-Corn Silage

THE soy bean is regarded as a corn forage plant in Minnesota by Andrew Böss, vice director of the Minnesota Experiment Station.

Yields ranging from 12 to 22 bushels seed to the acre have been secured for period of years at University Farm. A. A. Army, in charge of farm crops, says:

"Since the soy bean is a leguminous plant, high in protein and fat, more protein may be expected than from the corn alone. Dairy cows receiving the corn-and-soy-bean silage need less protein in the form of bran and oilmeal than those receiving the corn silage. Figuring the protein at five cents a pound, and the carbohydrates at one cent a pound, the mixed crop has been found under experiments to be worth about \$6 more to the acre than the corn alone."

Have You Got Anything to Say?

WE BELIEVE that the best thought on practical farm subjects is in the minds of the farmers themselves; and, inasmuch as FARM AND FIRESIDE aims to be an experience exchange for practical farmers, your practical thoughts ought to be written out and printed in this magazine so that we can all benefit by them. With this idea in mind we will pay \$15 every month for the best editorial not exceeding 500 words that is submitted by any practical farmer, either man or woman, who reads this magazine, whether he or she is a subscriber or not. Write on any subject you choose, so long as you know what you are talking about and have something really worth while to say. Address Editorial Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City. Unused editorials will not be returned unless postage is enclosed.

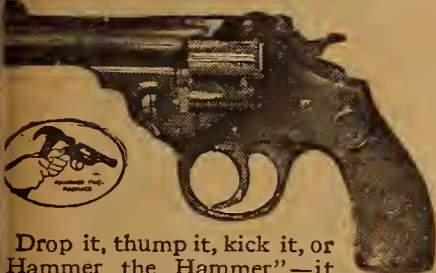
THE EDITOR.



Don't Leave Her Unprotected

Days are long and nights are dark. She won't mind having an Iver Johnson revolver in the home, for it is the "Safety" revolver.

IVER JOHNSON SAFETY—AUTOMATIC REVOLVERS



Drop it, thump it, kick it, or Hammer the Hammer"—it won't go off.

Just one way to fire an Iver Johnson. Pull the trigger all the way back.

Choice of three grips: Regular, Perfect Rubber, Western Walnut.

Three Booklets, one or all free on request
A"—Arms; "B"—Bicycles; "C"—Motorcycles
If your dealer hasn't in stock the particular model you want send us his name and address. We will supply you through him.

Iver Johnson's Arms & Cycle Works
10 River Street Fitchburg, Mass.
99 Chambers Street, New York
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Iver Johnson Bicycles are world famed for easy riding, strength and durability. Models and prices to suit everyone.

Sale—Southeast Missouri improved and cut-timber lands, rich, fertile soil, good drainage ms. We have big selection, prices right, easy s. Write us. Rice & Vaughn, Essex, Missouri.

President Suspenders for comfort

every pair guaranteed
MADE AT SHIRLEY MASSACHUSETTS

Real Workers and Wise Buyers insist on TOWER'S FISH BRAND REFLEX SLICKERS for Rainy Day Wear

Look for the REFLEX EDGE DEALERS EVERYWHERE.
A. J. TOWER CO.
BOSTON MASS.

Have You Got Your Medal?

IF YOU were in the service during the war, no matter whether you were a "doughboy," "gob," "leatherneck," army nurse, or yeomanette, you are entitled to receive a Victory Medal. If you were fortunate enough to get overseas and into some of the battles, you are entitled to battle clasps; but even if you did all your fighting against mosquitoes in a Texas training camp, as I did, you can still wear a medal.

The method of getting your medal is simple. Go to the nearest recruiting station and get a blank. Fill it in as they direct, have it certified by a notary, and give it with your discharge papers to the officer who will approve it and send it to the General Supply Depot of the United States Army at Philadelphia. Your medal will be mailed at once if your papers have been made out properly.

Another way is to apply through the local American Legion post. Go to them and they will fill out your papers and mail them in for you. Then on Armistice Day, November 11th, memorial services will be held and the medals presented with appropriate ceremony.

Can We Help You Out?

We are glad that so many of you took advantage of our invitation in July to tell us your problems relating to your war service. Through the Service Department of the American Legion we were able to help many. Others merely asked for information on American Legion, insurance, and other matters. We will be glad to hear from any ex-service man or woman about anything connected with your service that is puzzling you. Write, enclosing self-addressed envelope, to Andrew S. Wing, American Legion Column, FARM AND FIRE-SIDE, 381 Fourth Avenue, New York City.



Photo by Underwood and Underwood

This is Franklin D'Olier, national commander of the American Legion

Potash Versus Potassium

AS IS the case with the two other plant foods, what we know as "potash" may be guaranteed in at least two different ways. Most States require a statement of water-soluble potash. In one or two States, however, the statement must be for potassium instead of for potash.

Ninety-four pounds of pure potash (KO) contains 78 pounds of pure potassium (K). Or, putting the case in the reverse, 78 parts of pure potassium combines with 16 parts of oxygen to form 94 parts of potash.

From the above figures anyone can change a statement of potassium to a corresponding statement of potash, or the reverse. In the first case, multiply the figure for potassium by the factor 1.205. In the second case, multiply the figure representing potash by the factor 0.82.

Remember, once again, that there is no significance in this change. Pure potassium never occurs in nature. Even if it did, it could not be used in fertilizer, for it is highly caustic, and burns in contact with water. Equally, what we know as potash is not a stable compound, and cannot be used in fertilizer. The terms "potash" and "potassium" are used simply as measures of value; neither one has advantage over the other; either could be used.

The American Fertilizer.

Heavy Duty Re-Cutter and Grinder Complete
No. 155—6 to 20 H. P. Capacity 500 to 1000 bushels per hour.

No. 30—12 to 20 H. P. Capacity 40 to 100 bushels per hour.

No. 40—18 to 25 H. P. Capacity 60 to 150 bushels per hour.

No. 4—(Hand Power.) Capacity 1 to 2 bushels per hour.

Mill No. 04—1/2 to 1 1/2 H. P. Capacity 2 to 6 bu. per hour.

No. 20X—10 to 20 H. P. Capacity 25 to 75 bushels per hour.

No. 9—3 to 6 H. P. Capacity 8 to 40 bushels per hour.

POULTRY RAISERS should write for important Letz literature on Feeding for Earlier Poultry Profits.

Buy at this "Sign of the Letz" and get dependable grinder service. Displayed by leading dealers everywhere.

America's only complete line of hi-efficiency feed mills

FOR thirty years we have been manufacturing feed mills for the farms of America and Europe.

Today, hundreds of thousands of satisfied users attest to Letz supremacy.

During all these years, we have constantly striven to improve our product—to add to our line—to broaden its sphere of usefulness. And now, with the advent of the Letz DIXIE, the wonderful combined re-cutter and grinder shown above, our line is complete. It includes a mill for every grinding purpose.

This means that regardless of your locality or grinding requirements, you can have a mill built for your purpose by America's best known specialists, to do your particular kind of grinding—a mill that grinds with a greater speed, ease and economy than any other known process.

Letz Feed Mills are famous for their grinding plates. These plates have thousands of keen-cutting, scissor-like edges that cut, grind and pulverize all in one operation. No process equals them in fine-cutting, light-running, durability and capacity.

These plates are self-sharpening—grind anything grindable—are guaranteed to outlast three sets of ordinary grinding plates.

Letz Feed Mills enable every feeder to realize fully upon the profit-advantages of feeding ground feed as compared with whole grain. In reduced feed costs and fatter cattle, the Letz Mill soon pays for itself. Every farm should have one. Investigate!

Free. Two books that every feeder should read—one, our catalog; the other, "Scientific Feeding." Write for them today. Address

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America's Leading Feed Mill

LETZ MANUFACTURING COMPANY

347 EAST ROAD CROWN POINT, INDIANA
Wholesale Distributing Houses in 46 States insure prompt service through Letz Dealers Everywhere

Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

ONE Malcolm Burns, who signs himself "Manager of Sales" for the Calcasieu Oil Refining Company of Lake Charles, Louisiana, has written me this letter:

"DEAR SIR:—To give the people of your State an opportunity to share in the big profit of the oil industry of Louisiana, we are using the local papers as a medium of reaching them; also by our liberal offer of a year's subscription of your paper.

"We will give 20 per cent commission and pay for a year's subscription to your paper for a full page ad of four (4) issues in exchange for all stock sold (not less than 50 shares) through your advertising. The Editor places two coupons on the ad, one for the subscription of the paper and the other for our form coupon, application for stock. We will deduct the commission due you plus the year's subscription and forward same to you.

"Understand the subscription coupon for your paper is sent to you, thus allowing you to keep an exact record of all stock sold through your advertising or paper.

"We will furnish copy of ad, which will include attention to subscription coupon; we ask that a copy of the paper be mailed to the corporation.

"If you wish to avail yourself of this great coöperative opportunity, you are requested to do so at once, as we are only offering this for a limited time, which is very short.

"We are mailing you under separate cover our booklet, etc., which will enable you to fully understand the need of refineries to cope with the big oil production of the State of Louisiana.

"Thanking you in advance for your prompt attention, we are

"Sincerely yours,"

That certainly is very kind of Mr. Malcolm Burns, but we don't do business that way. In the first place, we are not in the habit of using the editorial department to promote the interests of stock-selling of any kind. Our job is to get out a magazine containing interesting, practical, and useful information for the more than 700,000 readers of this publication.

Furthermore, we personally wouldn't put one penny of our scant supply of money into a proposition of this kind. Nor would we do so if we had millions of dollars to invest. And we think that the readers of FARM AND FIRESIDE will know how to judge this and similar proposals for themselves.

We don't want any subscriptions obtained in this way, either. And as for full-page advertising for this oil company in this publication, I will say that they couldn't buy a nickel's worth of space in FARM AND FIRESIDE under any circumstances, nor at any price.

Thar, B'Gosh!

In one of the back pages of a little magazine that is published in the interests of writers I came across this letter from a farmer, which is too good and too true not to reprint:

"I, a farmer, rise to plead with the writer who is forevermore picturing the farmer as a bayseed with chin whiskers and a straw between his teeth. I wish to state that the farmers of to-day no longer consider chin whiskers essential to successful agriculture, and have, consequently, discarded them. Furthermore, I have never heard a farmer use the expression, 'allowed as how.'

"It is gratifying to know that the farmer



Here we have "Curly" McNutt of Stamford, Texas, riding his pet pig "Rooter." "Curly" is the kind of lusty young lad who makes things hop wherever he happens to be. So long as the weather is good and he has the whole State of Texas to let loose in, he's all right, but woe be to the house and everybody in it when the weather keeps "Curly" shut up for a day. Can't you just guess that from the glint in his eye? The picture was taken by Frank Reeves

is no longer in a state of mental depravity. Most of us are very well educated and have an artistic temperament. We read Milton, Stevenson, and Carlyle, and some of us even write fiction.

"I think the farmer is as qualified to write of the city as the city writer is to write of us. For instance, one writer pictured a farm maiden sauntering forth with a keg of nails to fix a fence! Another writer had a poor man cutting oats in January!

"The next time you write a story in which the farmer plays a part, try to do him a little justice. So thar now, durn ye!"

Some day the world is going to wake up and realize that the peculiar animal, "the farmer," is a human being, neither better, worse, nor different from any other person who treads this mortal soil.

Are You Rusting Out?

Now, here's a letter from J. J. B., who says he's tired of farming after a lifetime at it,

and wants to take his little pile and settle in town. He plainly says that he wants to sit down and he, as the poet Alexander Pope says in his Essay on Man:

"Fixed, like a plant on its peculiar spot,
To draw nutrition, propagate, and rot."

I have answered such questions in these pages before, but it will do no harm to repeat:

Even an iron constitution will get rusty if it is neglected.

The good Lord seems to have made most of the things in this world with the idea that they would keep moving. It is a law of nature that inaction shall result in destruction. When vegetation has served its purpose as such, and falls to the ground, nature at once begins the tedious but sure task of decomposing it and turning it into plant food, which will get back into action again through the medium of another crop.

The binder that lies inert in the field rusts out and is ruined. The horse that stands too long in the stable goes soft, and

bas to be hardened up again through action. The furniture that is left in the attic falls to pieces. The mind and muscles that you have kept hard at it for years will suffer the same fate if you retire completely and quit exercising them.

It is only by keeping in action and keeping interested that we keep alive. Quit working if you like, but don't quit doing something, for if you do you will be, to all intents and purposes, dead.

Ha! Shark Steak!

A news item from Havana reads as follows:

"Hundreds of fine steers stampeded on board the American steamer 'St. Charles' outside of Havana Harbor Saturday afternoon, and, after creat-



These two Watsonville, California, boys know good sport when they see it. They got this deer as the prize trophy of a day's tramp in the California hills. They were snapped on the way home as they passed Frances E. Webb's ranch, Rural Route No. 1, out of Watsonville

ing a panic on board the ship, plunged into the sea, where they became the prey of the sharks which infest the waters off Morro Castle. Except for the few that swam ashore and are now wandering about in the suburbs of this city, all the 800 steers on the 'St. Charles' are believed to have perished.

"Sanitary officers who inspected the vessel on her arrival Saturday were alarmed when they found 130 dead steers in the hold of the ship. To avoid possible danger to the people of the city, they ordered the captain of the 'St. Charles' to put out to

sea and there throw overboard the carcasses of the cattle that had died. When the crew was engaged in this onerous task the steers on board became frightened, broke down their corrals, ran up and down the decks, and then plunged overboard where sharks were awaiting them. Few were seen to strike the water almost simultaneously, and in an instant they were dragged beneath the surface, only a trail of blood telling of their fate."

That was a very human performance the part of those steers. How often do mortals get all excited about some imaginary peril and use it as an excuse to plunging into a much graver menace that we didn't even know existed!

Queer Races

Just after reading a letter from C. J. of Wisconsin, telling about the sack race, potato races, and other contests they were planning for their local fair this fall, I came across an item in "The Sun and New York Herald" about odd races of various kinds all over the world; and it was so interesting I'll reprint it:

"There is a story to the effect that a farmer in Westphalia laid a wager that twelve bees of his, released at a distance three miles from their hives, would travel as rapidly as a like number of pigeons of the same course. The first bee, properly powdered for purposes of identification, did, as a matter of fact, arrive at its hives a quarter of a minute before the coming of the first pigeon to its cote.

"A curious form of race is sometimes indulged in in India—the Noab's Ark race. At one that was recently run near Calcutta a goat proved the victor over an elephant and a horse, the latter being a bad third.

"The slowest races in the world are snail contests, which in normal times are held in certain parts of Germany at which we would call county fairs. The winners are much esteemed and frequently fetch high prices.

"An ox race is also held in Germany which each ox must be ridden by its own hareback. No whip, spur, yoke, harness, nor any means of guiding is allowed. The rider must depend entirely upon his voice to accomplish the end he has in view,

as the oxen do the race on a track, across a large open field, the skill of the riders undergoes a severe test.

"Speed is a secondary consideration in this race, for the rider who can induce his steed to go in a straight line is sure to win.

"The start is made at one side of a mile square, finish being at opposite side.

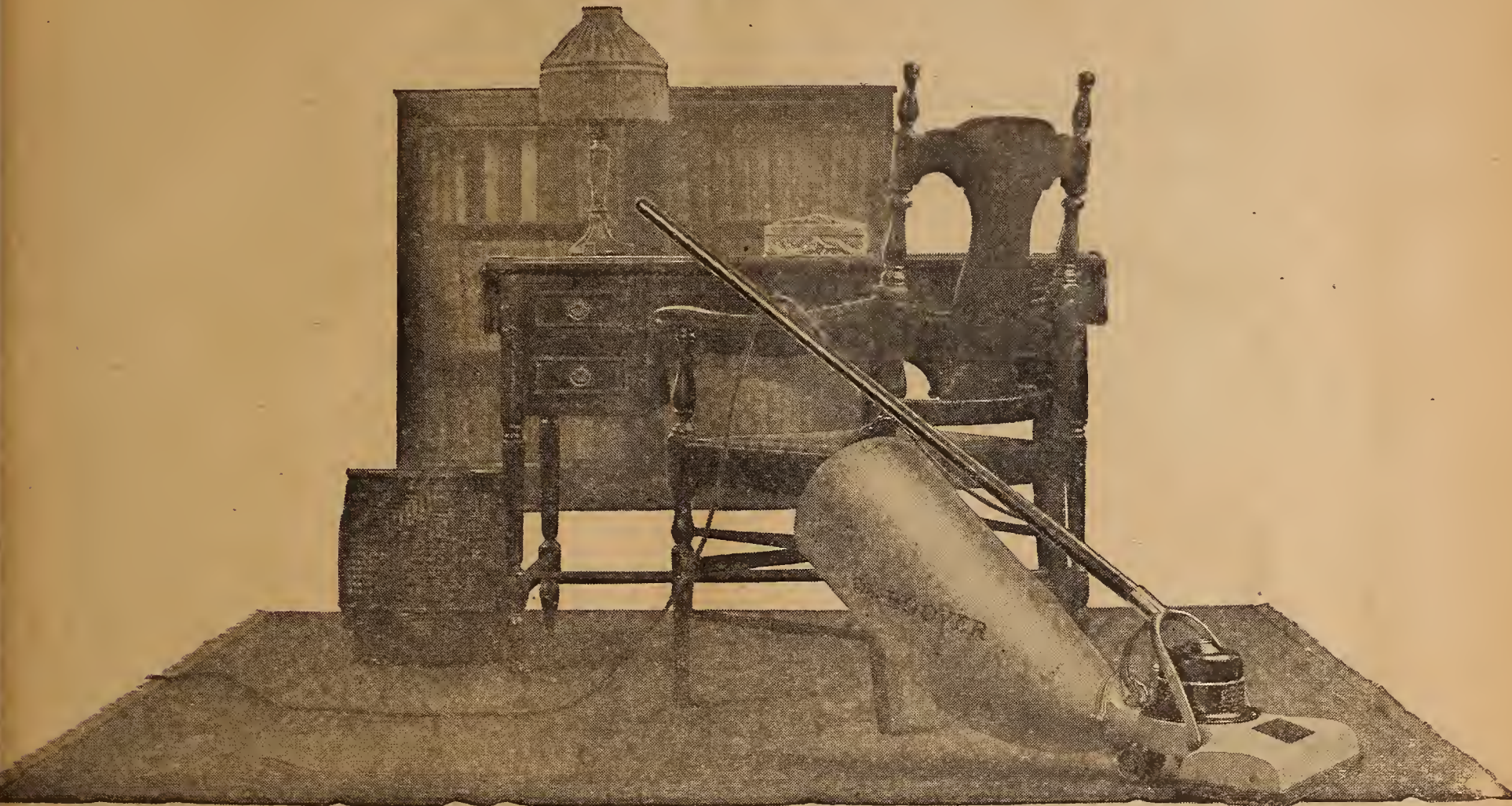
"Despite the efforts of the riders, majority of the oxen refuse to move toward the mark, and as the spectators are allowed to do anything they wish to interfere with the rider, except touch the mount, the difficulties of the race are not inconceivable.

"Oxen are very excitable beasts, but the shouts of spectators soon reduce them to a state of complete bewilderment.

"At Saint Cloud, Paris, there was once a novel cycling race. The course was laid down a very steep hill, and the contestants who came in last was declared the winner. Brakes were prohibited, and riders were not permitted to set foot on the ground to tack across the course."

George Martin

The Hoover lifts the rug from the floor, like this — flutters it upon a cushion of air, gently "beats" out its embedded grit, and so prolongs its life



For years, in the finest mansions of two continents, The Hoover has been prolonging the beauty of the costliest rugs that have been woven. It steadfastly has beaten out all the harmful embedded grit, swept up all the stubborn litter, brushed straight the velvet nap, revived the rich colorings and suction cleaned the surfaces. Only The Hoover does all this. And it is the largest selling electric cleaner in the world.

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 North Canton, Ohio Hamilton, Canada



The Republican Party and the Farmer

YOU farmers of America have more at stake in this election than any other element in our citizenship.

You have borne more than your full share of the burdens of public waste, extravagance and mismanagement.

You want a change.

You want this change at Washington because the present national administration has singled out yours, the biggest of all national industries, as a target for a price fixing policy which has limited the return for your output, while leaving you exposed to the exactions of profiteers in every other line of production, distribution and speculation.

You Have Been the Victim

You have been told what you could charge for your staple products, you have been subjected to all sorts of restraints, exactions and annoyances, while there has been no limit to what others might charge you for food, clothing, machinery and other necessities of your occupation.

The result of this unwise, unsympathetic policy, while harmful to the farm producer, has not been helpful to the consumer. Production has been curtailed, speculation in food has been facilitated, and that expansion of the great farming industry essential to America's future has been halted.

Make the Farm More Profitable

The Republican party, by its platform and the utterances of its candidates, is pledged to a sympathetic, practical, helpful attitude toward American agriculture. It promises a constructive program which will make the farm more profitable and therefore more productive.

The Republican party is not a class or sectional party; its policies are intended for the up-building of the whole nation. But it believes that it is essential to the general welfare that the American farmer, whose industry is the base

of our national prosperity, should be stimulated to larger production through an assurance to him of a larger share of the values which his own labor and enterprise create.

The Democratic platform reaffirms the tariff-for-revenue-only policy which will open the American market to the invasion of cheap farm products of foreign lands (the resultant of cheap labor) when shipping becomes available. It promises no relief from the price fixing and other farm policies of this administration, or remedy for the violent fluctuations in farm product prices which have caused the farmer such heavy losses.

Pledges of the Party

Here is what the Republican platform and the country-bred candidate say on the issues of special interest to the farmer:

Practical and adequate farm representation in the appointment of governmental officials and commissions.

The right to form co-operative associations for marketing their products, and protection against discrimination.

The scientific study of agricultural prices and farm production costs at home and abroad, with a view to reducing the frequency of abnormal fluctuations, and the uncensored publication of such reports.

The authorization of associations for the extension of personal credit.

A national inquiry on the co-ordination of rail, water and motor transportation, with adequate facilities for receiving, handling and marketing food.

The encouragement of our export trade.

An end to unnecessary price fixing and ill-considered efforts arbitrarily to reduce prices of farm products, which invariably result to the disadvantage both of producer and consumer.

The encouragement of the production and importation of fertilizing material and for its extended use.

The extension of the federal farm loan so as to help farmers to become farm owners and thus reduce the evils of farm tenancy and also to furnish such long-time credit farmers need to finance adequately their land and long-time production operations.

Revision of the tariff as necessary for the preservation of a home market for American labor, agriculture and industries. (Note that the pledge to the farmer is just as specific to labor and capital.)

Harding's Endorsement

Senator Warren G. Harding, the Republican nominee, in his speech of acceptance took advanced ground on behalf of agriculture. He said:

"I hold that farmers should not only be permitted but encouraged to join in co-operative associations; reap the just measure of reward merited by their arduous toil."

"Our platform is an earnest pledge of renewed concern for agriculture, and we pledge effective expression in law and practice. We will hail that co-operation which makes profitable and desirable the ownership and operation of small farms and which will facilitate the marketing of farm products without the lamentable waste which exists under present conditions."

"A Republican administration will be committed to renewed regard for agriculture and seek the participation of farmers in curing the ills justly complained of and to place the American farm where it ought to be—highly ranked in American activities and fully sharing the high good fortune of American life."

"Becoming associated with this subject are the problems of irrigation and reclamation so essential to agricultural expansion, and the continued development of the great wonderful west."

Mr. Harding pledges federal co-operation with state governments in building and improving farms-to-market roads rather than national highways, to cheapen and facilitate the quick shipment of crops.

Republican National Committee,
Auditorium Hotel, Chicago, Ill.

Please send me, free and postpaid, copy of Senator Harding's Address on the present day problems of the farmer.

Name.....

Address.....

Send for a free copy of Senator Harding's address in which he discusses at length present day problems of the farmer.

REPUBLICAN NATIONAL COMMITTEE, Auditorium Hotel, Chicago

The area of roofs covered yearly with Certain-teed is greater than that covered by any other kind of prepared roofing. Certain-teed comes in rolls—both in the staple gray kind and the mineral-surfaced green or red, and also in green or red mineral-surfaced shingles for residences. Light, medium and heavy Certain-teed Roofings are guaranteed for five, ten or fifteen years respectively. The mineral-surfaced Certain-teed is guaranteed for ten years.



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CERTAIN-TEED has always been lower in price than the less modern types of roofing. This was true when building materials and skilled labor were not so high as today.

It is even more true now, because, generally speaking, Certain-teed costs the user less than it did years ago.

In the few places where the price is not lower, the increase is much less, proportionately, than the increased cost of labor and materials.

Certain-teed has always cost much less to lay. Because of the present high wages, the saving in laying costs effected by Certain-teed is greater than ever.

But Certain-teed does more than reduce building costs; it gives you a better roof—a weather-proof, rust-proof, and spark-proof roof—guaranteed for five, ten and fifteen years, according to thickness.

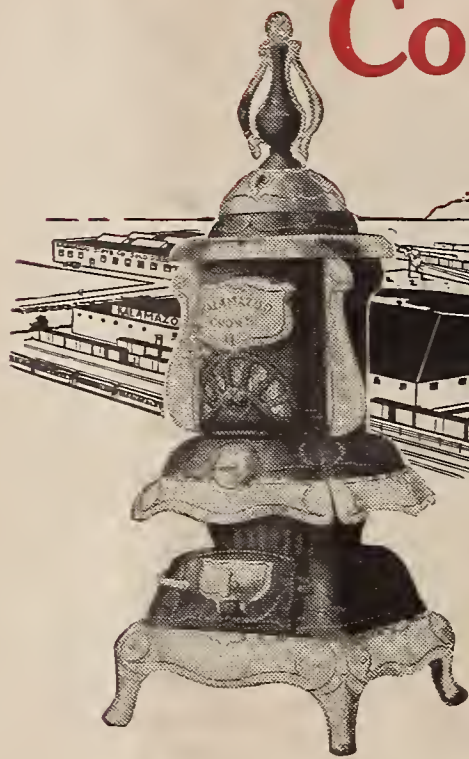
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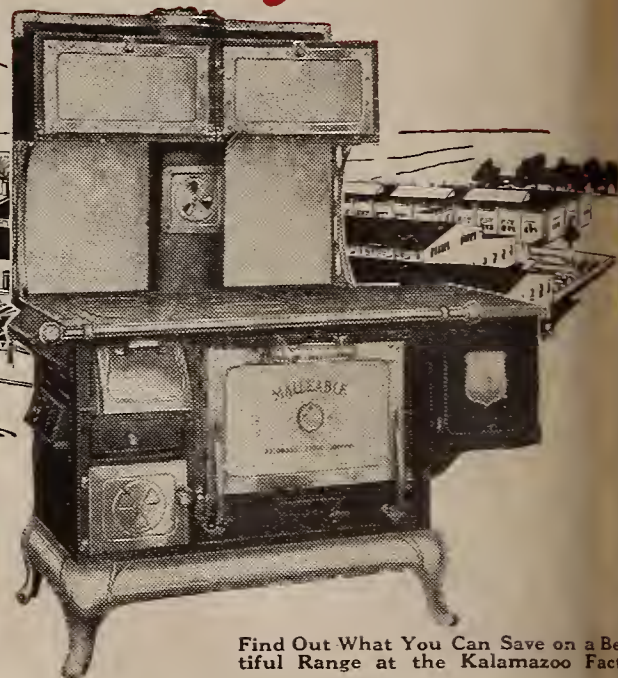


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Good Stoves and Furnaces Always Cost Less at the Factory



Where Do You Buy Yours?



Find Out What You Can Save on a Beautiful Range at the Kalamazoo Factory

Figure it out for yourself. Who can make prices as low as the manufacturer? No matter where you buy your new stove or range, some one must get it from the factory. Why not get it direct yourself at the manufacturer's price?

It is simple. Easy as mailing a letter. The quality can not be beaten and the saving is worth while.

You've heard of "A-Kalamazoo-Direct-to-You." But how much do you know about the saving you can make with Kalamazoo prices? Why not find out?

Suppose you let us send you this new Kalamazoo catalog. No one will hound you for an order. Pick out the furnace, stove or range you think you would want. Note its price and then compare it with the nearest design like it in your local town. Write for this Catalog.

Do You Wonder Why Kalamazoo Customers Boost for Us So Highly?

About 75 to 80 per cent of our business each year can be traced from the good words of recommendation of our old customers. Brothers, sisters, sons, daughters, cousins and other relatives of Kalamazoo customers write us and say they want a stove, range or furnace like the one they saw in our customer's home.



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But why wait for some Kalamazoo owner to convince you? Kalamazoo savings this year are greater than ever before. And a saving this year means more to you. Your dollar will buy more in a Kalamazoo. More in the quality and more in the advantages of dealing direct with manufacturers.

Also Save Money On These Other Articles

Also get "Kalamazoo-Direct-to-You" prices on paints, roofing, sanitary indoor closets, sewing machines, cream separators, washing machines, fireless cookers, Congoleum floor covering, aluminum ware, and many other household articles that you need and are buying all of the time. Cash or easy payments. Thirty days' trial. We pay freight. Money-back guarantee.

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Kalamazoo, Mich.

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U. S. DEPARTMENT OF AGRICULTURE



REMINGTON-SCHUYLER

Do You Want It?—See Page 5

How Many Mo- Can You Eat



Will that hungry family ever get enough pancakes? They go so far in eating them, they haven't had a chance to eat any herself. No wonder, for these are the best pancakes, made from Pillsbury's Pancake Flour. That new and delicious combination of cereals. Add only water—everything required, including milk, is in the flour.

Always buy Pillsbury's Family of Foods—different in kind, but alike in quality. At your grocer's.

Pillsbury's Best Flour
Pillsbury's Wheat Cereal

Rye, Graham and Macaroni

PILLSBURY FLOUR MILLS
Minneapolis, U. S. A.



Pillsbury's

FAMILY OF FOODS

Pancake Flour

Westclox



Where the alarm clock is wound up the farm won't run down

THE FARMER can't do much by lamp-light—except to figure his profits for the year. And if he doesn't get up early he can't do that.

So now when the days are getting shorter, he wants to make use of every bit of daylight there is.

He is up with the sun, or earlier. There's a lot to do and no time to lose. Fall plowing may not be nearly so romantic as harvest time: the city man might call it plain drudgery. But the farmer knows it's the

only way to insure next year's crop. He's glad to get up early to do it.

A trustworthy alarm clock can always find a steady job on the farm. One farmer has said that where the alarm clock's wound up the farm won't run down. And there's a lot of truth in that.

So the modest little alarm clock plays a big part in the job of producing the nation's food. You might easily call it the country's breakfast bell. And Westclox have long been favorites on the farm.

WESTERN CLOCK CO., LA SALLE, ILLINOIS, U. S. A.

Makers of *Westclox*: Big Ben, Baby Ben, Pocket Ben, Glo-Ben, America, Sleep-Meter, Jack o' Lantern


Factory: Peru, Illinois. In Canada: Western Clock Co., Ltd., Peterborough, Ont.

"Now every nerve must be employed, to save
The bounties of the earth, which Nature gave,
And lay up store against the time of need,
That you the unfortunate poor may feed."

From the "Farmer's Almanac," October, 1832



LEE Puncture Proof Tires



☐ The man who devotes his energies to the soil, knows better than any other, the true meaning of "service."

☐ From time out of mind the farmer has been forced to exact the *limit of service* from his men, his live stock, his lands, his equipment.

☐ So it is that he, of all men, has been quickest to take advantage of the added service—the multiplied mileage; the conservation of time, labor and money—represented by Lee Puncture-proof tires.

☐ Because the tire-wrecking dangers of *puncture* have been absolutely *eliminated* by building into them a "triple-coat-of-mail," Lee Puncture-proof tires *hold their original air longest*—insure maximum service.

☐ Thus, the Lee Puncture-proof feature adds enormously to the *value-giving* ability of tires which are already the equal of

the best pneumatic tires made, in every construction item.

☐ Three layers of case-hardened steel discs, individually embedded in pure gum, are made a part of every Lee Puncture proof tire carcass, (as here shown) *protecting both tire and tube* from the possibility of puncture.

☐ Hence, Lee Puncture-proof tires (whether "cord" or "fabric") carry our unqualified guarantee against *puncture*—in addition to the *unlimited mileage guarantee* applied to all regular cord and fabric tires of Lee manufacture.

☐ One of the most efficient services rendered by Lee Puncture-proof pneumatics is in their use on light or medium capacity *farm trucks*. For this purpose, they are the ideal equipment.

☐ Any Lee dealer—and there are Lee representatives everywhere—will *analyze your tire service conditions*, and furnish the Lee tires best suited to your needs.



LEE tires
smile
at miles



Section showing
LEE
Puncture-proof
construction

LEE TIRE & RUBBER CO.
Executive Offices — 245 West 55th Street
NEW YORK CITY

FACTORIES CONSHOHOCKEN PA.

Do You Want It?

Being a frank discussion of whether the United States Department of Agriculture is worth anything to you

By E. T. Meredith, Secretary of Agriculture

I HOPE to be able to show you that the Agricultural Department touches you and your farm every day in more places than you ever dreamed. I hope to write to you as your representative who has been in Washington making a preliminary survey of the plant you have there, of the organization, to tell you some of the things it is doing, and to ask you, if I may, whether or not it is worth the money.

The product of the Department is service to you, and it is a wonderful service. We have 21,000 employees, something over 4,000 of them in Washington and 17,000 throughout the United States. The 17,000 come in contact day after day with you farmers throughout the country. They have to do with county-agent work, with the eradication of diseases among livestock, plant diseases, insect pests, market-reporting, weather service, protection of the forests, and other activities.

The Department of Agriculture is divided into seventeen bureaus. The present regular appropriation is approximately thirty-three millions. When you say, however, that you are appropriating thirty-three millions for agriculture you are hardly telling the real fact. It is really something like ten or twelve millions, because approximately two million is set aside for the Weather Service, some six million for the Forest Service, some for part of the Meat Inspection Service, Food and Drugs Act, and so on.

When you realize some of the results accomplished with "only ten or twelve millions," you will put the emphasis on the "only," because it is a mere trifle compared with the results.

YOUR industry of agriculture that the Department serves has an invested capital of over eighty billion dollars. You can take all the railroads in America, all the manufacturing institutions—iron, steel and all the rest—some seventy-five other industries, add them all together, and you will have just met the capital invested in your business of agriculture. The agriculture and livestock product last year was twenty-five billion dollars, equal in one year to our national debt at the present time—one half the wealth of France.

Isn't it a big subject? Isn't it something worthy of attention? Isn't it something worthy of this "only ten or twelve million dollars asked for each year?"

Now, how do these bureaus come in touch with you?

Why, the method of handling your eggs in storage and transportation has been studied and improved. The Bureau of Chemistry has seen to it that there are no injurious ingredients in your catsup. When you put maple sirup on your cakes, it has seen to it that if the product was labeled maple sirup it was maple sirup. The cotton in your automobile tires is stronger and more durable than in the past, because the Department has developed long-staple

cotton industries, has shown how to produce cotton of better fiber.

Your clothes—the Department touches you there not only through its work with cotton and wool, but also through its valuable results in developing dyes and dye materials which will help to make us independent of foreign supplies. Your shoes—the specialists have developed methods of treating leather that prolong its life, and other specialists are showing how to prepare hides and skins with the least damage and waste.

Your medicine—the Department sees to it that the labels on it do not say it is a remedy for such and such a thing unless it actually is a remedy. Even in your recreation hours the Department is with you. Its protective hand reaches out to the wild birds and animals and provides game for your hunting. It keeps the national forests spick and span for your vacation.

The Weather Service is a part of the Agricultural Department. You know that it puts out the storm signals, you know it

ever stop to think that the head of the bureau receives only \$6,000 a year?

Now for some of the general results:

Since 1880 there has been a gradual increase of 25 per cent in the yield per acre of wheat—25 per cent for the whole country.

Corn increased 10 per cent; oats, 24 per cent; potatoes, 33 per cent; hay, 20 per cent; cotton, 3½ per cent. The acre yields for other field crops have increased 16 per cent. Better methods, the introduction of improved machinery, the

Here is Secretary Meredith as he appeared when he participated in the formal planting of a tree in Potomac Park recently

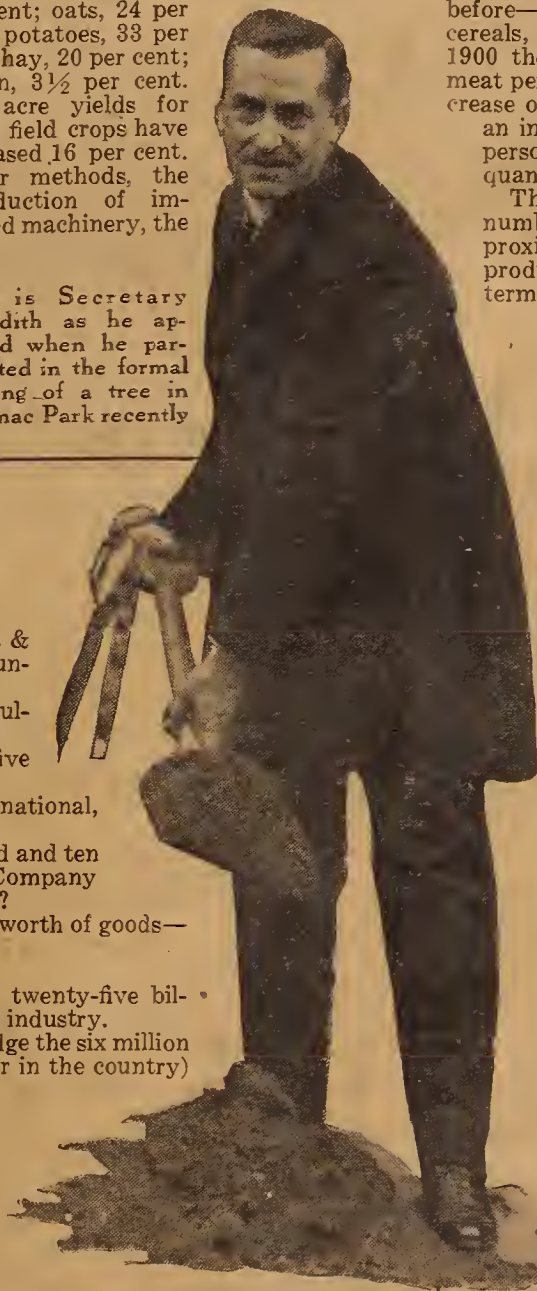


Photo by Keystone View Co.

Let's Figure It Out on a Common-Sense Basis

THE total invested capital of the firm of United States & Company (of which you and I are members) is two hundred and fifty billion dollars.

Of this, about eighty-five billion is invested in agriculture—land, stock, and equipment.

Mines, manufactures, railroads, and some seventy-five other industries use another eighty-five billion.

The remaining eighty billion is in homes, government, national, state, and local property, currency, and other items.

Now, what per cent of annual return do we one hundred and ten million American members of this firm of United States & Company make on this two hundred and fifty billion invested capital?

Why, we produce, annually, about fifty billion dollars' worth of goods—food, clothing, shelter, and conveyances.

That's a twenty per cent return on our investment.

Now, of this fifty-billion-dollar income of ours, about twenty-five billion is produced by agriculture, and twenty-five billion by industry.

After looking at it this way, do you, as a farmer, begrudge the six million dollars a year (that's about a dollar a year for every farmer in the country) you pay for the support of the Department of Agriculture?

The six million the Department gets for its agricultural work from you farmers is a very tiny per cent, (about one-fourth of one thousandth of one per cent), of the twenty-five billion dollars' worth of crops you produce every year—many of them by methods discovered by the Department of Agriculture.

A billion is a thousand million—so you are only paying six million dollars protection and insurance on twenty-five thousand million dollars' worth of invested capital.

That six million is an infinitesimal fraction of one per cent of twenty-five billion.

With the work it is doing, we believe the Department of Agriculture ought to have anything up to five hundred million dollars a year to work with, if it wants it.

Yet it has to struggle to wring a paltry twelve million a year from Congress.

Ridiculous, isn't it?

THE EDITOR.

forecasts the weather, but do you know that it influences the icing of the cars for your fruit? Do you know it influences the shipment of your vegetables? There are a dozen places that the Weather Service touches you, that you do not realize.

Good roads had been devised and tested by the Bureau of Public Roads, and the wear and tear under all sorts of traffic conditions have been studied by it. This bureau will supervise the expenditure of government and state funds for roads in the next twelve months of considerably more than half a billion dollars. Did you

development and planting of larger producing varieties, the elimination of plant diseases and insect pests, are some of the factors giving this happy result. And yet some ask whether the farmer is lying down, whether he is doing his part!

Production also has kept up with the increase in population. Fifty years ago, or from 1856 to 1874, the average production per person of the six principal cereals was 38 bushels. From 1915 to 1919, it was 52 bushels, an increase of 14 bushels. The production of corn increased from 23 bushels to 27 bushels per capita. Wheat in-

creased from 6.2 to 8 bushels; oats, from 6.7 to 13.9 bushels; cotton, from 36.5 to 52.7 pounds per person; milk from 84 gallons in 1889 to 96 gallons in 1919.

Meats have shown a reduction in production per capita, but we have a larger variety of foods to-day than we ever had before—more fruits, more vegetables, more cereals, and our diet is more varied. In 1900 there were produced 248 pounds of meat per capita; in 1914, 182 pounds, a decrease of 66 pounds; in 1919, 222 pounds, an increase over 1914 of 40 pounds per person, and we are still exporting large quantities.

The farm workers have increased in numbers from 5,900,000 in 1870 to approximately 14,000,000 in 1919, and the production of each farm worker in terms of leading cereals also has increased. From 1856 to 1874, each farm worker produced an average of 266 bushels annually. From 1906 to 1914 the average was 406 bushels, while in the five years 1915 to 1919 the average production per farm worker per year was 418 bushels.

THESE figures are interesting, particularly in connection with the discussion of the cause of the high cost of living. The cost-of-living problem is a mutual one for all of us. It is the farmers' problem, it is the laborer's problem, and it is the business man's problem, and we must all work together mutually to meet the situation. If there are more men on the farms, farming more acres, each acre producing more per acre; and each man producing more per man, giving each one of us to-day more of the six leading cereals per capita than we have had before, it seems to me the farmer is doing his part pretty well.

During the war, in spite of the labor shortage, the farmers increased their planted acreage by 33,000,000 acres, and their yield by 635,000,000 bushels, above the average for the pre-war period.

In response to the Department's request to increase the acreage of winter wheat in the fall of 1918 to 47,200,000 acres, they actually planted 49,261,000; and the following spring they planted

over 22,500,000 acres of spring wheat, which was up to the record. Certainly, we must appreciate that, under the conditions then existing, with the farmers producing food as they produced it they saved the situation.

You know that when the war broke out we owed Europe some \$500,000,000, and I have no doubt that you were worrying; in fact, it is a common knowledge that we were wondering and asking how we were going to pay when we were called upon to do so. Yet, in a single year, the exports of farm products from America increased by \$500,000,000, and then the balance was on the other side of the ledger.

Some of the other specific things your Department has done might be interesting:

Take long-staple cotton: There in Arizona, New Mexico, and other parts of the Southwest were thousands of acres which grew nothing. The Department brought from Egypt a [CONTINUED ON PAGE 26]

My Four Big Fruit-Marketing Problems And How I Solved Them

By F. F. Rockwell

Corresponding Editor of Farm and Fireside

DID you ever know a fisherman to buy a new pole and a lot of flies, and take a trip to a good fishing stream, with hip boots, net and all, only to find after he got there that *his line was not quite long enough* to allow him to cast to where the fish were?

You would put him down as a pretty foolish fisherman.

And yet you and I know many fruit growers who are in much the same way.

They go to the expense and trouble of growing a crop of good fruit; they know where the market for it is, but they just fail to reach the returns they should get because they don't give the attention they should to *putting their crop on the market*.

This applies especially to the farmer who grows a little fruit, rather than to the big commercial fruit grower. But I've known plenty of the latter, too, who fished with a short line when it came to marketing their crop.

It is an absolute fact that much—and often most—of the *net profit* from your fruit crop will be determined by what happens to your crop from the time it comes to maturity on the trees and its reaching the consumer.

But it has always seemed to me that getting the most money you can out of this crop is only half the story.

By marketing this season's crop properly you are *building for the future*. By marketing it poorly, you are building barriers against success in the future. Many a grower has made the fatal mistake of using slack, if not absolutely tricky, methods in a season when the crop was short; and then wondered why he was "discriminated against" when the crop was plentiful. I say that an absolutely square pack and honest dealing pays even in a season when you think you could make a little more money by keeping one eye shut during harvest time.

BUT having the *will* to be honest in your marketing isn't all that's needed.

If you're comparatively new at the game, you'll find there are four steps to it; and you should study carefully how to take each step.

These four steps are: Picking, grading, packing, selling.

All of these things, in turn, depend largely on whether one is going to aim at the local or the general market.

That is the first thing to determine. That is a matter which each grower must settle for himself, where any possible local market exists. Of course, in big fruit-growing sections there is little possibility of developing any local market.

In general, if there is quite a variety of fruit to be sold, and the quality is excellent,

then selling locally may get a bigger net price for the crop. If there is little variety in the product, or the quality is not the best, then one will be seriously handicapped in trying to develop a local market.

Another important factor to consider in deciding whether to try to sell locally or not is whether there is any coöperative selling organization. If there is, the chance of getting profitable prices on the general market will be very greatly increased.

Another factor is the kind of local market available. I've known a big mill town, making a splendid market for garden truck,

then decay or decomposition sets in. Many fruits go on ripening after picking, for a considerable time. Your aim in harvesting is to so handle the fruit that it will reach *full ripeness* just at that time you want to *put it on the market*.

In picking summer and fall apples—which go usually to local markets—I like to get them when they are in condition for the table, but still crisp and solid. A few days' delay may bring them soft and almost mushy, while still on the tree. If stormy, or for other reasons picking is uncertain, take them off as early in the morn-

ing. There is a period of a few days, after they begin to color and when they lose the hard stoney "feel" of green peaches, and before they become soft enough to dent when lightly pressed, that they are just right for taking. Pressed tightly in the hand, they have a resilient, almost springy feeling that is hard to describe but easy to recognize once one has done any picking.

All picking, so far as possible, should be done when the fruit is dry and cool. Often apples are placed, temporarily, in heaps under the trees. It is much better, where possible, to take them at once to the storage house or cellar, which should be made as cool as possible, in advance of receiving the fruit. If they must be put in piles, place these in the shade. I have had large quantities in the sun ripen so fast as to spoil a considerable percentage of the fruit as compared to part of the same crop that was put immediately in the cellar.

ALL the fruit, when being gathered, should be handled like eggs; even hard winter apples, like Baldwins and Greenings, will bruise sufficiently to start rot spots later, unless the utmost care is taken in picking. A bruise that does not show at all at the time of gathering may spoil a whole barrel of fruit.

For picking I like a half-bushel bail basket, with a stout hook on the handle to hang it over a limb or ladder rung. A stave basket should be used, as the rough edges of splint baskets will bruise the fruit easily. A burlap lining, even for the stave basket, is desirable if one is gathering high-grade fruit.

Each picker should be given a card or number, so that his pick can be checked up. A careless picker may easily spoil more good fruit in a day than his wages come to.

The handling after picking should be just as careful. A good general rule is to handle the fruit "like eggs"—literally. I never "pour" apples, even the barrel grade, for winter keeping.

Grading is most important if you want to get maximum returns from your crop.

The first thing to aim at in grading is to have the package—box, barrel, or basket—all *one variety*.

Next is to get uniform size and, so far as possible, uniform shape and degree of maturity. There should be at least two grades, and the culls. It is my experience that the first and second grades mixed will bring little or no more—sometimes actually less—than the second grade by itself. Therefore, even if you are selling but a few barrels it will pay to carefully pick out the "firsts."

The best of the second grade should be put to one side for facing the barrels. This consists of carefully hand packing the first three tiers at the bottom of the barrel (which will be the head when opened). Place the fruit in circles, stems toward the middle of the barrel. Break joints between the rows, in the different layers. It is better to place the rest of the contents of the barrels by hand, but they may be poured in very gently from a basket small enough to be lowered into the barrel, so the apples do not drop out. [CONTINUED ON PAGE 38]

Picking, Grading, Packing, and Selling Are the Problems

PICKING, grading, packing, and selling are the points I discuss in this article. However, I believe that the biggest opportunity for the small-fruit grower lies in coöperating with his local dealers in a selling campaign.

One that will make his particular brand of fruit so well and favorably known that it will command *preference* and a *premium* in his local markets.

But a trade-mark or brand alone is of little use to this end.

First, must come good fruit. Second—and this is the vital spot in the business—must come an attractive package and an absolutely honest pack. Always, with *no exception*.

The dealer must be able to depend absolutely on the even quality of your stuff.

And third, your advertising. Your package should identify the stuff as yours.

Posters or placards for the dealer should set forth its qualities in such a way as to make the name of your brand or farm stick.

A little space in the local papers may be used.

At any rate, you can present your biggest apple or a sample package of your best pack to the local editor; or run him out to the farm, while the harvest is on, and show him how carefully your crop is handled, and get a "write-up."

I have done all these things, and know they can be done, and will help a lot.

Followed persistently for several years—and never letting down on *quality*—these methods will in time establish you in your local market, in a way that will add greatly to the income from your fruit crop.

Even the first year they will produce results. But it's the steady building, year after year, that will finally get you what you want.

F. F. ROCKWELL.

to be a very poor market for choice fruit.

Where the local markets are good, I have found it pays to give one or two best dealers in each town the *exclusive* sale of your product, if such an arrangement can be made. This protects the retailer in getting a fair price, and naturally makes him more interested in pushing your stuff. (Some suggestions, based on my own experience of how the grower may coöperate with local dealers, I have given in a later paragraph).

Picking the fruit is where a very big per cent of marketing trouble starts.

The first step, of course, is to decide *when* to pick. That, again, depends largely on whether one is picking for the local market or not.

I've found that the following can be put down as a general rule: The earlier the picking, the better the keeping qualities of the fruit. The later the picking, the better the eating quality.

In the above, by "early" and "late," I refer to the degree of maturity of the particular fruit being harvested. What is late for one variety would be early for many others, and vice versa.

The reason for this is that picking alters the changes which are taking place in the texture and composition of the fruit as it matures. All fruits develop from the growing or "swelling" state to the full sized "green" state, and from that to maturity or "ripeness." And

ing as possible, or during dull weather, and store in a cool place.

I have often seen needless waste of windfalls, especially in small orchards, by letting the fruit lie in the hot sun for several days, whereas picking it up immediately after falling, and storing at once in a cool cellar, taking care to leave out all the badly bruised ones, would have saved three fourths of the loss.

In picking winter apples, especially if bright, sunny fall weather has prevailed, I aim to get them fairly soon after they have reached full size, or as soon as they begin to show good coloring. Leaving them until fully colored, as so often happens, means fruit that will not keep long.

PEARS, as regards picking time, are very different from apples. Pears *lose* quality by ripening fully on the tree, even for home use. A change takes place in the texture, which makes the flesh lumpy, almost gritty.

They should be picked as soon as they have reached their *full* size, usually before much of any color shows. If the end of the stem of the fruit, where it is attached to the tree, will snap off readily when the pear is taken in the hand and lifted up, then the fruit is ready for picking.

Then store them in a cool, dark rather *close* place to retard ripening—especially of the winter varieties—as much as possible. Free circulation of air and warm temperature stimulate the ripening process. Kieffer pears may be stored in boxes, or even barrels, but the table sorts should be put in layers, not more than three or four deep. It will take Bartlett's a week or ten days to mellow after being stored.

The time of picking for peaches must be watched most closely. If allowed to get fully ripe they won't stand much ship-

How I've Farmed Successfully for Forty Years Without Livestock

By Frank I. Mann

I HAVE often been asked how I can farm for permanent and increased soil fertility when I have no livestock to make manure for my land. A lot of people can't believe that as a grain farmer I am able to do it. My answer in every case is simply this: I always return to the land more plant food than I take out of it in the crops that I harvest.

And since I have no livestock to make manure, this explanation brings on the question, How? Here again the reply is simple. I do it by rotating my crops, and in this rotation grow a legume the plowing under of which puts nitrogen and humus into the soil, by applying ground rock phosphate to each field once every four years, and by using as much limestone as is necessary to grow good crops of clover and to keep the land sweet.

In a nutshell, this is the reason why I have been able to crop continually Bois d'Arc farm, and, after forty years, still produce almost 100 bushels of corn, 100 bushels of oats, 63 bushels of wheat, and about 3½ tons of clover the first cutting.

Having told this story to thousands of farmers in seven States of the Middle West, the question often arises if my system is applicable to any other but Illinois soils. It is, and will hold good on all normal soils; but on some types, such as sand and peat, it is not the best, for potash, as a rule, is the missing element.

The popular idea that manure is needed to maintain and increase soil fertility is wrong. Manure will not even maintain the original fertility, to say nothing of increasing it. This applies where the farmer feeds only crops grown on his own farm.

In the first place, the fertility taken out in the grain and hay that is fed to livestock is the same stuff that makes fat, grows bone, tissue, hair, hide, hoofs, etc., and it is only natural, then, that part of these elements are sold off the farm in the form of meat and bone. I don't recall the exact amount which is returned in the manure, but it is not half of what the crops take out of the land.

And not all of this fertilizer is returned to the soil either, because, through inefficient handling, much of the fertilizer is lost through leaching. The steam we see arising from a manure pile looks inoffensive, but this is the nitrogen going off into the air.

Farmers who have a rotation in which they grow clover and apply manure to the land will discredit what I have said about manure not being able to maintain fertility. Continued good yields, they say, are the basis of their seemingly strong argument; but with my system of applying more than is taken off in the crops, I have been able to increase my yields, even though I don't have manure.

THE facts in the case are these: All of our normal corn-belt soils, for instance, run from 4,000 to 6,000 pounds of nitrogen in the surface soil. By growing clover, and plowing under part of it, together with crop residues, there is enough nitrogen, with what is released from the subsoil, to produce good crops for years.

While we may not know it, all of this time the crops are drawing more from the soil than is put back, and in time it will show. The only phosphorus put back on the land is that in the manure, so naturally the element runs down quicker than the nitrogen. The nitrogen supply is taken from the air by the clover.

In time the supply of phosphate runs low, and the yield will decline, even though there be plenty of nitrogen. I showed this plainly when I applied various fertilizers to my soil, and got an increase only from phosphate. The application of nitrogen fertilizers did not show any results because the soil had enough of it to grow the yield which I got.

Let us take the soils east and below the Missouri and Ohio rivers, and the lower third of Iowa, Illinois, Ohio, and Indiana. They cannot grow big crops in these sections unless they use clover, and plow it under as green manure. They lack nitrogen.

My own experience, which I believe is conclusive, will be told as I go along in relating to you how I have handled my farm.

I have been on this farm for fifty-three years. My father bought it back in 1867, and operated it until 1878, when I took over the management. There are 500 acres in the place, but outside of 100 acres of high ground, which was cropped and used to grow nursery stock, it was not farmed much. This 100-acre piece was pretty thin, and in the first place was not very good land.

I gathered soils from all parts of the State, and found that nitrogen, phosphorus, and limestone were the main things lacking in the soils in our State.

It was further worked out that most land had plenty of potash, but the supply of nitrogen and phosphate was low.

It was also found that a large part of our land would not grow clover because it was acid, but that this fault could be remedied by the use of ground limestone. The Government and some of the

tion had, as I said before, held up the yields for a while, because it restored the needed nitrogen.

That year I decided to make a number of tests to discover just what was wrong. Accordingly I mapped out parts of the fields, and on each plot I applied manure at the rate of 10 tons to the acre, ground rock phosphate, bone meal, a few nitrogen fertilizers, and ground limestone. The crops showed an increase only in the fields which had been manured and to which bone meal and phosphate had been applied. It was plain, therefore, that the limiting factor in the yields was the lack of phosphorus.

And, since the rock was the cheapest form of getting this needed phosphate, I ordered a car, and spread it over one field at the rate of 1,000 pounds to the acre. I put it on the second crop of clover, and plowed it under. Check strips in the same field further concluded that phosphate was the missing link to better crops.

Since then I changed the application from 1,000 pounds to one ton, and some fields I gave an extra heavy treatment to see what would result therefrom.

The rotation has been around three times now, so that every field has had a good treatment, the minimum treatment each time being at least one ton.

THE following table shows the relative yields from different soil treatments the first year after heavy treatments:

	Corn Bu.	Oats Bu.
Two-year rotation.....	25	31
Four-year rotation, with clover.....	67	55
Four-year rotation, with clover and regular phosphate treatment.....	84	78
Four-year rotation, with clover and four tons of phosphate.....	92	89

It is usually the case where phosphate is applied on the spring or fall plowed ground, and worked in with a disk when preparing the ground for corn, that the yields are disappointing. It should be understood that, to get the benefits the first year from phosphate, the element should be placed where the roots can get at it. However, when it is applied in a rotation each time, it can be plowed under because there is enough phosphate in the soil from the last application for the crops to feed upon.

It has been my experience that this treating of the soil adds to the quality of the crops. Phosphate makes for early maturity, depending upon the balance of elements in the soil. If the land has an oversupply of nitrogen, the crop, as a rule, will not mature, but continues its vegetation growth until it is too late.

Check strips of treated and untreated land brought this home to me one year. I found that, on untreated land, only 35 per cent of the corn was mature, when it stopped growing, against 80 per cent on the treated land. In 1911, when the season was long and dry, frost not coming until October, the untreated corn was 60 per cent solid, while 85 per cent of the treated grain was mature.

Turning under clover might not seem to be a good idea to some, but since my first crop of hay is as large as most people get in two cuttings, I can afford to do this to build up my soil. Decomposing clover liberates a lot of nitrogen, and it breaks down rapidly. I have found that the decomposition is so rapid and complete that before a rotation has passed the crop is so broken down that it is inadequate for liberation purposes.

In order to make this clearer, I will say that nitrogen may be contained in well-decayed vegetation, but this vegetation does not have the power to liberate plant food. It is the active decomposition that does the work, and this starts shortly after the crop is turned under. It continues until the vegetation is so well broken down that it becomes a part of the soil, and thus is inactive. When decomposition is carried on as far as is possible, the vegetation is in stable form.

Ordinary soils contain tons and tons of the elements which grow plants, but much of this food is in an unavailable form, and located in the [CONTINUED ON PAGE 40]



This is Frank Mann with some of his Illinois wheat

Who is Mann, Anyway?

FRANK I. MANN, owner of Bois d'Arc farm at Gilman, Illinois, is one of the best-known farmers in the country. He doesn't look his sixty-three years, being active, and takes an active part in the operation of his farm. He is a brother of the Republican House leader, James R. Mann.

He was born on the place where he now lives. He has three children, one of them being Charles Mann, county agent of Bureau County, Illinois, one of the best counties in the State.

Mann is a graduate of the University of Illinois, getting his sheep-skin back in 1872. It was while going to college that he got the technical foundation for his system of farming. And it is this education which has enabled him to put his findings into language which the layman can understand. He is a director of the Illinois Farmers' Institute, and addresses thousands of farmers every year.

Close to one million farmers in seven States have heard Frank Mann tell of his system of farming. Other States have drafted him to help their farmers get along. He is also a member of the phosphate committee of the Illinois Agricultural Association.

When not on the institute platform, Mr. Mann is at home working out his farming scheme for the following year, or, during the busy season, out in the field taking active charge of the work. He owns more than 500 acres of the best land in the State—land which produces almost double that of his neighbors!

THE EDITOR.

The first thing I did when I took over the farm was to establish a rotation, growing corn, corn, oats, and clover. I continued this for twenty-five years, when I changed it to corn, oats, wheat, and clover—the present rotation.

For a while the yields were good, the effect of the clover being very plain. After a few years, however, the yields dropped off. I did not know the cause at the time, but now as I look back I can readily see that it was the low supply of phosphorus.

About this time the Illinois Experiment Station began to publish the results of tests of various kinds of soils. They had

Eastern States say limestone only renovates the soil, but my contention is that it supplies calcium for the clover, and that is why I continue to use it even though my land will grow the legume.

I say that if clover requires from 38 to 48 pounds of calcium to grow a ton of hay, then on my land, which produces several tons, some of this element must be supplied by the limestone which I put on the land.

About sixteen years ago my yields were none too good, because they had dropped down, due to what I later found out was the supply of available phosphorus in the soil. The incorporation of clover in a rota-

Either Way—a Farm-Born President



Photo by Underwood & Underwood

NO, THE dog isn't a Democrat. He just doesn't like the smoke from Senator Warren G. Harding's cigarette. Senator Harding was born in Blooming Grove, Ohio, November 2, 1865, and spent his boyhood on his father's farm. He worked his way through Central College, Iberia, Ohio, and eventually became owner of the Marion, Ohio, "Daily Star." He was elected U. S. senator in 1914. If successful in November, Mr. Harding will be the first senator and the first newspaper man to become President.

THIS is the birthplace of Governor Coolidge, near Plymouth, Vermont (below). His father still lives there, on the farm. Governor Coolidge's home is in Northampton, Massachusetts. He pays \$32 a month for half of a double house, but doesn't know how soon they may raise his rent now that he has become prominent in national politics.

GOVERNOR COOLIDGE has not forgotten his boyhood days on his father's farm near Plymouth, Vermont. He is seen here running a mowing machine on the home farm, where he recently took a vacation celebrating his nomination and his forty-eighth birthday. The smock and boots he is wearing belonged to his grandfather, and are carefully saved for the governor to wear on his visits home. The machine is running nicely, judging from the contented expression on Mr. Coolidge's face.



International

THIS lovely old house overlooking the Hudson River has long been owned by the Roosevelt family, and is now the home of Franklin D. Roosevelt. In the Roosevelt family are four children, three boys and a girl. The Roosevelts are an old Knickerbocker family, having lived in and around New York City for many years.



Wide World Photo



International, Courtesy Ohio State Journal

IT IS traditional that Ohio presidents should come from plain farm homes. The above picture shows the birthplace of Senator Harding in the village of Blooming Grove, Ohio.



Wide World Photo

THIS is the birthplace of Governor Cox near Jacksonburg, Butler County, Ohio, which he now owns, and is restoring to its original condition. It was built by his grandfather, Gilbert Cox.

LIKE his illustrious relative, the "Fighting Teddy," Franklin D. Roosevelt graduated from Harvard, and started his public career in the New York Assembly. Both served in the Navy Department in Washington, and both entered national politics as Vice Presidential candidates. Franklin D. Roosevelt was born at Hyde Park, Dutchess County, New York, January 30, 1882.



Photo by Underwood & Underwood



Wide World Photo

ALTHOUGH a newspaper man by profession, Governor Cox loves farming, and comes naturally to it, for he was born March 31, 1870, and raised on a farm near Jacksonburg, Ohio. If he were accepting the nomination for President, he couldn't look more pleased than he does in this picture showing off his prize Holstein cow. The cow looks rather bored, as though she were saying, "Why all this fuss? I knew he would do it all the time." At fifteen, Cox left the farm for school in Middletown, Ohio. He became a reporter in Cincinnati, and now owns papers in Dayton and Springfield. He is now in his third term as governor of Ohio.

Here is What Harding Promises—

I AM much pleased to say a word to the FARM AND FIRESIDE family about what I conceive to be our national problem of agriculture, and the means by which we can cope with it.

For one thing, we must make all people realize that there is such a problem. It will not do to permit the impression that nobody except the rural community is concerned about the present or the future of farming as an industry, or as a mode of life. The war imposed on our nation the obligation to feed not only our people but also our allies, and no section of the community performed a greater service, or performed it more magnificently, than did the farmer. The farmer found his supply of labor drawn upon by the army, navy, and the sudden vast expansion of industry on account of war demands. He nevertheless met the requirements of our own country and our allies abroad, and his contribution saved our cause from collapse. A good many things have been pointed to as "having won the war," but I think none deserves that commendation more genuinely than does the effort of the American farmer.

Out of the immense effort he put forth, the farmer now emerges to discover that

his very service to the world has compelled him to face new problems that will remain long after the immediate effects of the war have passed. Our best agricultural land has advanced vastly in price, and the inevitable result of that is greatly to increase farm tenancy. I was astonished recently

to be informed on the best authority that in the great agricultural State of Iowa there are fewer farmers on the farms to-day than there were forty years ago. That means that something is radically wrong. We have long been urging measures to keep the owner upon his land. We have pointed out persistently the evils of tenancy, in the exhaustion of soil fertility. All the history of civilization has been a history of increasing farm tenancy as land prices increase. It seems to be inevitable, and therefore I am impressed that we need to seek means to mitigate the evils of tenant

THE statements of Senator Harding and Governor Cox which appear on this page express their views on agriculture and what they propose to do about solving its vital problems if elected. We asked them to say a few words to the readers of FARM AND FIRESIDE, and both courteously responded. These statements are exclusive, and will appear in no other publication.

farming, and to prevent them as much as possible rather than to attempt to prevent tenancy altogether.

I suppose both the land and the tenant would be better off if we could devise systems for long-time leases, under which it would be to the interest of both the tenant and the owner to protect the fertility of the soil. Obviously the tenant who is farming under a one or two years' lease is likely to get as much as he can out of the land, regardless of its future.

On the other hand, if leases were made for long periods the tenants would have the same interest as the owners in maintaining the land's productivity.

The Federal Farm Loan Law marked a first step toward providing capital for the farmer, but it must be regarded as only a step. We might learn much by studying the coöperative agricultural systems of Den-

mark, Ireland, and of the fruit growers in California, the potato raisers of Maine, and other specialized agricultural industries. Whatever the Federal Government can properly do in this direction should be done, to encourage coöperation in buying farm supplies and selling its products. Support of our national leadership must be given to encourage the States to adopt progressive measures of this sort. We have not much more than begun to apply these lessons to our conditions.

Somewhere between the farm producer and the city consumer there is altogether too much slack, which needs to be tightened up. The details of specific remedy can only be worked out through counsel and thorough study. But it seems to me that the line along which these studies should be made is indicated by the things I have suggested.

Our future as an industrial country is secure enough, if we make certain that markets will be provided for our industrial products. But undeniably our agricultural interest faces a real crisis. It must have attention, intelligent and vigorous attention. The problem is one of construction and adaptation, and the Republican party's program contemplates exactly this.

And This is What Cox Has to Say

AGRICULTURE is both an art and a science. To maintain the fertility of the soil is the most important material problem of the United States.

Farmers know, if others do not, that every farm is an individual business, requiring for its successful conduct accurate knowledge of that particular soil. It is the province of government to assist the farmer with scientific information about what the soil needs to maintain and improve its productivity. With the proper functioning of the individual farmer and the Government in this regard, there should be little concern about a shortage of food in this country, at least for many years to come.

While it is true that acre production in this country is less than in Europe, we have the advantage in being able to produce greater yields per man. Through the use of labor-saving machines our farmers manage greater areas. Because of this utilization of power-driven machinery American farmers have withstood the heavy drains upon their labor supply by city industries.

There has never been a time in our history, and there should never be such a time, when the best interests of the nation demand that farm boys should, without exception, remain on the farm. Whether by choice, native ability, or force of circumstances, the farm boy who elects to follow some other pursuit, ought not to have his free action impeded. It will not be through keeping the farm boys on the farms that the problems of American agriculture will be solved. We should desire that our people be free to elect their calling in life, and oppose restraint of that free principle.

We who have gone from the farms testify our love for the environments of the farm home. The best expression of the word "home" is found, perhaps, in the thousands of comfortable rural homes in America. Were it possible to convince farm boys that the greatest happiness and prosperity in life is possible on their native soil, self-interest would induce them to stay there. But the heart of youth is eager for untried things, and until human nature changes, it is idle to attempt to stem the tide.

It is not the business of Government to aid such a program, but it certainly comes within the province of Government to foster a better spirit, a higher pride, a broader outlook in farmers to the end that they adopt the best facilities for living that they can afford. Through such means farm families can reasonably expect life in the country to be as attractive as existence in

the city. This governmental aid may not be extended directly, but through the enactment of requisite laws farmers may be enabled to work out these and kindred problems.

Agriculture is the basic industry, because upon it depends the food supply. Because of its indispensability, agriculture properly should receive governmental sponsorship. It devolves on Government to help in maintaining as nearly as possible the balance between food production and consumption. Farming will not inspire individual effort unless its profits are equal to those in other activities.

OUR future as an industrial country is secure enough, if we make certain that markets will be provided for our industrial products. But undeniably our agricultural interest faces a real crisis. It must have attention—intelligent and vigorous attention.

Warren G. Harding

THE price the consumer pays for foodstuffs is no indication of what the producer receives. There are too many turnovers between the two. This is a matter of such importance that the Federal Government can profitably expend money and effort in helping to solve it.

James M. Cox

Adequate rural school facilities would, beyond any doubt, be a check to depleted ranks in the fields, and the establishment of a modern state rural school code would be a step in that direction. The Federal Government should maintain active sponsorship of this. Rural parents would be lacking in the element which makes civilization enduring if they did not desire for their children educational opportunities comparable to those in the cities.

The price the consumer pays for foodstuffs is no indication of what the producer receives. There are too many turnovers between the two. Society and Government, particularly local and state, have been remiss in not modernizing local marketing conditions. Municipalities must,

in such quantities as to keep the demand in excess of the supply which is released. This is an unfair practice, and should be stopped. Besides, there should be a time limit beyond which perishable foodstuffs should not be stored.

Every successful modern business enterprise has its purchasing, producing, and selling departments. The farmer has maintained only one—the producing department. It is not only fair that he be enabled both to purchase and to sell advantageously, but it is absolutely necessary, because he has become a competitor with the manufacturer for labor. He has been unable to compete in the past, and his help, in consequence, has been insufficient. Therefore, the right of coöperative purchasing and selling should be removed from all question.

Agricultural thought has not been sufficiently represented in affairs of government.

Many of the branches of the Government which deal remotely or directly with the soil and its problems would be more valuable if the practical experience of the farmer were an element in their adminis-

tration. To be specific, the Interstate Commerce Commission, the Federal Reserve Board, the Federal Trade Commission, and the United States Tariff Commission are administered by business men. Does anyone contribute more to the making and success of railroads than the farmer, or to the creation and prosperity of the banks, or to the stability of manufacturing and trade units.

Our objective should be a decreased tenancy. With the period of occupancy uncertain, the renter strips the land of fertility and each year diminishes our national assets. Under the operation of the Federal Reserve and the Farm Loan acts, encouragement has come to thousands who find that industry, character, and intelligence are a golden security to the people's banker—the Government of the United States.

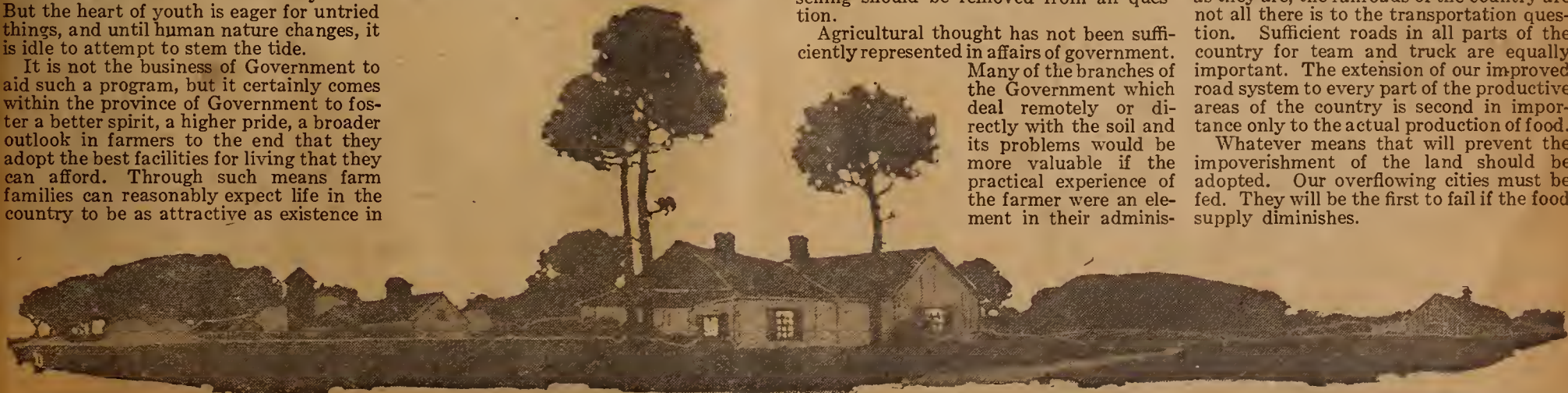
Multiply our home owners and you will make the way of the seditious agitator more difficult. Bring into the picture of American life more families, happily a part of garden and flowers all their own, and you will find new streams running into the national current of patriotism.

Help to equalize the burdens of taxation by making the holders of hidden wealth pay their share with those whose property is placed in plain view.

Common prudence suggests that we increase to our utmost our area of tillable land. The race between increased consumption and added acreage has been an unequal one. Modern methods of soil treatment have been helpful, but they have their limitations. There are still vast areas in our country performing no service to humanity. They require only the applied genius of man to cover them with the harvest of human necessities. The Government should turn its best engineering talent to the task of irrigation projects.

Any discussion of food supply leads very quickly to the closely related matter of transportation. There is no one thing which brings us intermittently to critical conditions than the insufficiency of our transportation facilities. Comprehensive as they are, the railroads of the country are not all there is to the transportation question. Sufficient roads in all parts of the country for team and truck are equally important. The extension of our improved road system to every part of the productive areas of the country is second in importance only to the actual production of food.

Whatever means that will prevent the impoverishment of the land should be adopted. Our overflowing cities must be fed. They will be the first to fail if the food supply diminishes.



If You Want a Movie Outfit for Your School or Club, Read This

By Andrew S. Wing

IF YOU have been considering the installation of a motion-picture machine in your school, church, or community house, maybe you have been asking yourself the following questions:

"Can we afford to buy a motion-picture machine?"

"How can we operate it when we have no electricity?"

"Is it difficult for an inexperienced person to learn to operate a 'movie' outfit?"

"Where can we secure films, and what do they cost?"

With these things in mind, I made a study of the motion-picture business as it applies to rural districts. I learned that it is quite practical for every rural school, church, farm bureau, grange, or farmers' club in the United States to have their own motion pictures. In this article I will try to tell something of what other farming communities are doing with "movies," and also to show how you can secure a motion-picture machine and films suited to your needs.

But first, to clear up any doubts you may have as to the practicability of motion pictures outside of regular theatres, read this letter from a Wyoming ranch visitor:

"On reaching Aladdin, Wyoming, I met a young rancher named Pearson, who had driven twelve miles in his machine to get some supplies. He invited me out to his ranch over Sunday. The roads were lined with two-foot snow banks, and the car ran in ruts made by other machines. When I got to the ranch, pretty nearly frozen in spite of my sheepskin coat and mittens, we all hugged the big kitchen stove and began to swap stories. I told the rancher and his wife the latest news I had picked up in Cheyenne, a few hundred miles south, and what the people there thought about events of the day.

"Suddenly we were interrupted by the ringing of the telephone. Mrs. Pearson answered it, and conversation stopped while she talked on the party line with no less than six neighbors within a radius of twelve miles. Soon they were making up a party for Saturday night. It seems that pictures were to be shown, and they were all getting together for some fun.

"The next night, with the thermometer fifteen below, we bundled into the machine and drove to the three-room schoolhouse. They had a motion-picture machine, and showed a feature picture, a news weekly, and one of the animated cartoons. About two hundred people were there, and the admission fee was 50 cents.

"**T**HERE were greetings across the three rooms, which were thrown into one, and one of the girls started to play some of the latest hits from the "Follies." Soon all the people were singing or chatting. It was a great get-together meeting. Everyone seemed glad to see everyone else. In the corner, some young fellows had cornered a group of girls, and I never saw so many young men blush at the same time.

"The picture show itself was a huge success. Of course, it was punctuated with applause, and "Ohs" and "Ahs" and "Kill 'ims," but that only showed how much fun the audience was having.

"After the picture show the chairs were moved to the walls and a "Dan Tucker" started the evening's dancing. The dance lasted until one in the morning, when the party broke up and we all bundled up and went home. There was every

sort of conveyance imaginable—automobiles, mountain buggies drawn by young and lively mules, sleighs, and saddle horses.

"We all reached home in good spirits after a jolly evening, and I waked up next morning in time for a trip to church. I feel convinced from my several experiences of this sort in rural districts that the motion picture is one of the large factors in

of course, do not have as much available as the Department of Agriculture. On the other hand, the Department's films are available to all the state colleges at the bare cost of printing the positives from the negatives—four cents a foot, or \$40 for 1,000 feet, one reel."

But how can moving pictures be shown in isolated communities where there is no moving-picture theatre nor even electricity? The answer is easy. The county agent, school teacher, or country parson simply brings out his "suitcase" moving-picture projector, connects it to a

number of concerns are working on this problem of generating electricity for use in motion-picture machines in rural districts. One manufacturer is now putting out a small dynamo or generator built especially to be attached to small cars. A rheostat for regulating the current is attached to the dashboard of the car. It is not necessary to run the engine at a high rate of speed in order to generate sufficient current for a motion-picture projector. Another manufacturer is about to put on the market a small gasoline engine and generator combined in one unit. This can be carried in the back of a car, and provides an efficient and easily transported source of power.

ASUITCASE machine is so light and compact that it takes more time to thread a film through it than with the ordinary machine. Wherever a projection machine is used in a school, community house, or theatre, it is more desirable to install one of the larger machines. There are now a number of companies manufacturing a medium-sized machine which is not so expensive as the larger ones used in motion-picture theatres, and yet answers every purpose in a medium-sized hall. These range in price from about \$300 to \$450. They are usually equipped with very powerful tungsten lamps, instead of the usual arcs, which use much less current, and give satisfactory results. Operating one of these smaller projectors is now reduced to child's play, provided the operator is at all "mechanically inclined." An hour's instruction is usually sufficient for any intelligent beginner.

Most modern machines are equipped with fire-prevention devices, so that they are safe. Even if the film catches fire, a roller automatically snuffs the fire out before it goes far. The suitcase machines are used, usually, without a fireproof booth, since they are contained in an asbestos-lined case. State fire inspectors ordinarily permit their use without any special arrangements for fire prevention.

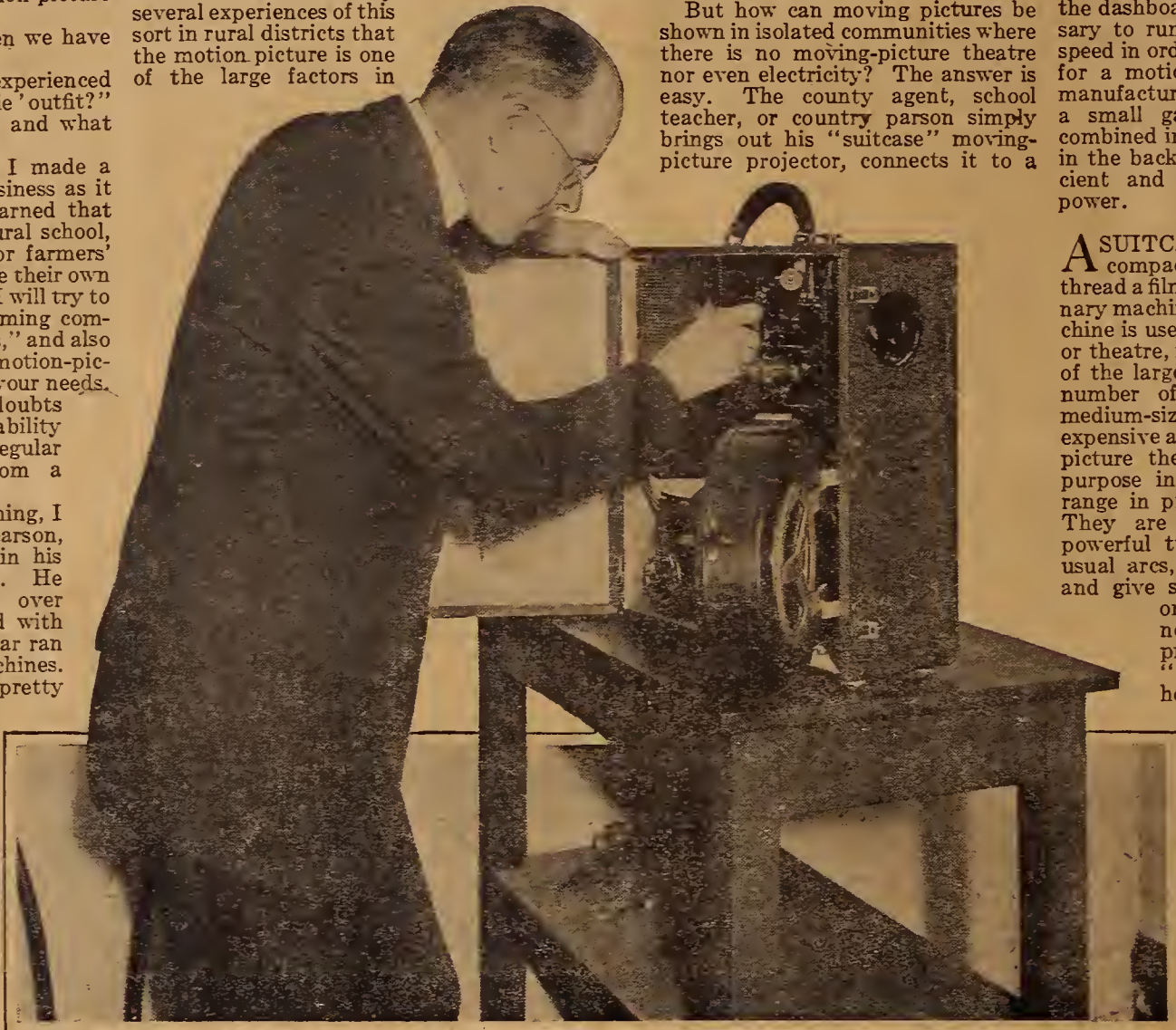
With the larger machines it may be necessary to construct a temporary or permanent fire-proof booth. Fire laws differ in the various States, but usually no serious difficulty is met.

The problem of films has been greatly simplified by the Department of Agriculture, which has a complete film laboratory and is releasing many high-class educational films and delightful travel pictures of the national parks and national forests. These are sold at cost to the state extension departments, who act as distributing agents for their respective States. Then there are several large film-exchange firms that are prepared to supply all kinds of films to any community in the country on short notice. They often get orders like this: "We are giving a farm-bureau entertainment and want a good, lively picture program. Send us a good film, preferably one of the Barrymores, a comic, a news picture, and an educational film that would interest farmers in this State."

This might seem like a hard one to fill on short notice, but they promptly send out a program such as the following:

Lionel Barrymore in "The Copperhead," Charlie Chaplin in "A Dog's Life," a news picture showing the most interesting happenings in this country and abroad, and a film showing how wheat rust develops, and methods for preventing it.

The cost of the films is moderate. Those [CONTINUED ON PAGE 47]



This is Edwy B. Reid, chief of the Revision of Publications of the Department of Agriculture, with one of his "vest pocket" movie outfits. It is Reid's job to see that all the bulletins and publications you get from the Department are interesting and useful and sound and practical before they are printed and mailed to your farm. It is a man's sized position, indeed. One glance will show you what this job has done to the top of his head

developing the social life of these districts."

In like manner hundreds of country churches, schools, and farm bureaus in all parts of the country are now giving their own picture shows, consisting of good plays and educational films instead of the cheap serials or silly slapstick comedies so often seen in small-town theatres.

Edwy B. Reid, chief of the Division of Publications, Department of Agriculture, who has charge of making the films for that department, estimates that 200 of the 2,500 county agents now have suitcase machines, and predicts that within a short time practically every one of the 3,300 counties in the United States will have their own motion-picture machines.

"A half-dozen state agricultural colleges are now producing films," said Reid, "but,

These are "stills" from the Department of Agriculture's film entitled, "The Charge Of The Tick Brigade," which was staged by Mr. Reid, and which tells the story of the pestiferous cattle tick which kills forty million dollars' worth of cattle in this country every year



Handwork Earned Me My Living, But Headwork Got Me My Farm

By Harry C. Hunt

Secretary-Treasurer, Union County, Indiana, Duroc Breeders Association

AS I look back over the twelve years that I have been farming for myself, during which time I graduated from a farmhand to the ownership of a 200-acre farm, and a herd of purebred Duroc hogs and Jersey cattle, I can readily say that the outstanding reason for my success is this: I learned to farm mentally as well as physically.

It took me the first three years I rented to learn that mental farming was as essential as physical farming, but it was not until I sat back and tried to figure out why I was not getting ahead that I came to this conclusion. I knew I was a good mechanical farmer—this had been proved during the six years I spent as a farmhand after leaving Father's farm. Moreover, I liked farming and farm life, so I couldn't see any trouble on that score.

A review of the three years showed me that I then owned \$2,000, an increase of \$1,500 over when I started. This was a return of \$500 a year, or little more than \$40 a month—not as good as I should have done off 90 acres, some hogs, and dairy cattle. But, then, the cows were grades, and the hogs did not do very well because they lacked the breeding so essential to quick growth and gains.

Farm magazines told me of the big prices which farmers were paying for purebred cattle and hogs, and they also brought to light that the purebred cows were giving many times the milk I got from my herd. The first chance I got I talked with one of the purebred cattle breeders, and he told me some things that opened my eyes.

THE more I thought of purebreds, the more I was determined to get a few head. I didn't have any idea of going into the breeding business, but I figured they would be a good thing for a farmer to have who was selling hogs for pork, and having his cows for milking purposes.

Before I knew it, I drew out my money in the bank and bought seven purebred Jersey cows and heifers, and a few bred Poland-China and Duroc-Jersey sows. When I compared the litters of the pigs, and the way they fattened with the grade stuff I had, I was surprised at the difference, and I noticed that my milk checks from the purebred cows were larger than from my grades.

Right away I sold off my grade stock and bought more hogs and cattle. I hadn't kept up the papers on the stock, but after a year I decided it would be better for me to do this, because the calves and pigs would be worth more money as breeding stock.

Having two breeds of hogs, I soon found out, would not do; so, after comparing the good points of the two kinds of hogs, I decided to keep the Durocs, they being more prolific, matured earlier, had bigger litters, and the sows proved very good mothers. All around, I saw, they were an ideal farmer's hog.

The idea of getting into the breeding game came after I had read some of the farm magazines, and looked through the pedigree books. I soon found out that the hogs and cattle I had were of the best families in the breeds, so I figured that, by using better males all of the time, in a few years I would have herds which would be worth a lot of money.

I followed out this plan, and that it was a good one is seen in the fact that I now own my own place, and am able to get very good money from my stock. It was brain work that made me do this—the reason for my success.

It was also the power of observation that enabled me to get good prices for my stock. I did it through advertising. I readily saw that other breeders were getting good prices for stock when they let the public know what they had, and the advertised brands of merchandise were available in most every store in town. I figured that advertising would sell my stock when I had a surplus. I had the blood lines, and the advertisements would draw the people.

It has worked out just as I figured. I believe that every dollar I spent for adver-

tising brought me at least \$500 worth of business. I don't believe I could have got along without it, for some of the breeders who live near me have just as good stock as I have, but they don't sell as much nor get near the prices I do.

Instead of waiting for customers, as they do, I go out and make them through advertising. However, advertising proved a boomerang to me, and nearly put me out of business. Buyers kept coming so fast that before I knew it I had cut into my breeding herd, and it was necessary for me to stop all sales in order to keep a few of the best cows I had. I am so low now that it will take a

was coming very fast. I had no idea where to go; the fact of the matter is, I had never been away from home overnight. All I knew was that I wanted to own a farm.

After looking around, I went to work on a farm in Union County, Indiana, hiring out at \$12 a month. At the end of the first month, to my surprise, the farmer gave me \$15, saying I was worth that much. It surely made me feel good, for this was more money than I ever had had at one time in my life.

Here we have Ross Hunt, eleven years; Harry Hunt and Dorothy Hunt, nine years



Some Men Would Have Been Too Lazy to Do This

HARRY HUNT is thirty-seven years of age, is married and has three children. Two of them are going to school. Ross is eleven, and Dorothy, nine. The baby is a year old.

When Hunt bought his farm, the house was nothing to speak of. At once he started laying plans for a new house. He didn't have the money to build one then, but he knew he would have within a few years. The first thing he did was to start cutting the oak trees on his place, and hauled them to the mill to have them cut into pieces for the woodwork in the house. Every stick of wood used in building the house came off the farm. He is proud of this fact, also of the fact that he hauled all of the materials himself. It is enterprise and thoughtfulness in matters like this that make one man a success and another a failure.

The house is modern in every respect, or will be when he can get it done. The wiring is all in, and he is waiting for his light plant. His furnace keeps the place warm at all times, and the bathroom is as good as you will find in any home.

The electric-light plant will provide light and power—the power to run machinery for the farm, and the wash machine, vacuum cleaner, electric iron, and fan for his wife. He says she should have all the comforts possible, for she works hard. Hunt has built new barns, hen houses, hog houses, and a fine garage for his big car. Everything is paid for on Hunt's place now, and he surely is glad of it.

THE EDITOR.

year or two before I will be able to sell much stuff.

My success is the climax to my leaving home, when I was eighteen years old, with only 75 cents in my pocket and a suit of clothes on my back. I left Father's farm because I wanted a place of my own. I'll admit this was pretty high shooting for one with 75 cents, but I did it just the same. I was the only boy at home; the rest of my brothers left the farm because they didn't like the work. I stuck because I liked farming, and the experience I got proved very valuable to me.

I left home in the fall of the year. Winter

My happiness didn't last very long, for I had to have a suit of working clothes, and this took nearly all of my money. I didn't care much, for I still had a job and a place to eat and sleep.

I remained here a while, and then went to work for this man's father, who had a place at Liberty, Indiana, a short distance from the farm which I now own. This man is an attorney, and, though he lived on the farm, the handling of the help and some of the management was left to me. I remained here for six years, never getting more than \$20 a month, but a lot of valuable experience.

At the end of this time I had \$500 in the bank, which I had saved from my wages, and I decided to go farming for myself. I rented 90 acres near Centerville, Indiana, using my capital to buy machinery, horses, and stock. Of course, I had to borrow money, but that didn't bother me any, for I was anxious to get started.

By dint of hard work, long hours, and strict economy I was able to save a little money, and at the end of three years I had about \$2,000. I was married at the beginning of my fourth year of renting. And it was at this time that I started into the purebreds. The coming of a baby boy made me more determined than ever to own a place of my own, and by this time I had figured that breeding stock would do the work.

THE hogs I had were of the Orion family, and the Jersey cattle of the Oxford strain—both leaders in the breed. When I learned these facts I was very happy, for I got them real cheap, buying them from small breeders who were not getting very much money for their stock.

As I said, the herdbooks with their pedigrees showed me the strains I had. The next question before me was, "How am I going to better my herd, since the real classy stuff cost much more money than I can afford to pay?"

I talked with several breeders, and they told me how to go about it. Their advice to me was to buy only male animals, of the family I wanted, and to breed up my females. This was a long course to follow, but it was the cheapest, and would bring results—the thing I was after.

So I watched my chance, and whenever I needed a bull or boar I looked around, and readily found one of the same family. I bought mainly with an eye to developing the animals, although the pedigree helped a lot. In buying bulls the butterfat records of the dams of the bulls were the things I looked for.

I continued to rent for five years after I made my start in purebreds. A little more than five years ago I decided to buy a place of my own. I had started selling some surplus stock, and was getting fairly good prices. This money, together with what I was able to earn from the sale of farm produce and milk, gave me enough to start my own place. I bought 200 acres at Liberty, which, with improvements, including a new house, barn, garage, hen house, and hog houses, cost me about \$25,000.

The first hogs I bought cost me \$100. They were two yearling sows and a boar, three in number. They had Orion Cherry King blood in them. I used the boar for a few years, and then bought one of the Colonel family. I alternated with boars of these strains, keeping my best females, and by the end of five years had a herd good enough for any man. Of course, I didn't get fancy prices, but it was easy to get \$300 and \$400 for my stuff.

FOR two years my herd was headed by Orion Cherry King Jack 2d. This boar was sold to the Yalehurst Farms of Illinois, and is looked upon as being the greatest Duroc boar in the West. His blood is in my herd now. This boar broke the Illinois State record twice for the price of sows bred to him, so he must be good.

The boar I am now using is Orion King's Colonel 5th, sired by Walt's Top Colonel, his dam being sired by Orion Cherry King, one of the greatest Duroc sires. My boar is a very good one, and he sired the two pigs which won first in the State feeding contest in 1919.

With the breeding of my hogs, it may not seem that the prices I get are very good; but they are fine when you consider that every time I sell a hog I get cash money, and not a bunch of paper. I would rather have a moderate price and get the money, than a great big one and have it on paper. My banker knows that every time I deposit a check for the sale of a hog it represents real money.

And my selling expenses are not heavy. Outside of the advertising, which, as I said, brings me \$500 [CONTINUED ON PAGE 47]

Million-Dollar Men



THEY'RE not really million-dollar men, these bureau chiefs of the Department of Agriculture—they are paid only a few thousands a year in cash salaries. But in the pests they kill off and the crops they develop they are million-dollar men in service to we American farmers. This is George Livingston, chief of the Bureau of Markets, inspecting baskets. His big job is to swell your profits by finding a market for your crops and devising ways and means of getting them there in the best condition at the smallest cost.

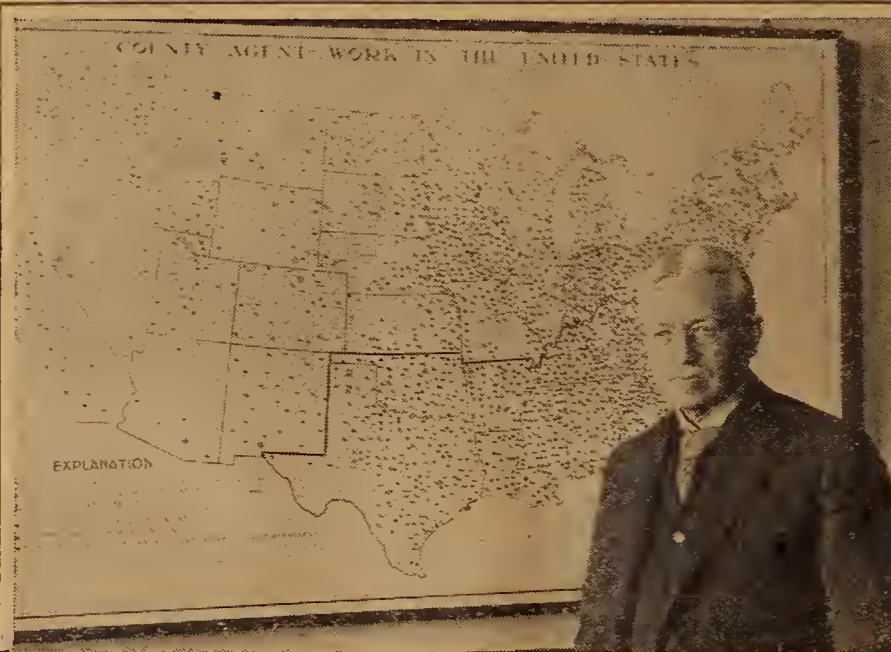


YOU wouldn't be able to take your crops to market over good roads if it hadn't been for the man standing so jauntily atop the road scraper. Thomas H. MacDonald, chief of the Bureau of Public Roads, is his name and title. He's working to make it easier for a lot of other farmers now by supervising a program for the laying of \$633,000,000 worth of new pikes. The benefits will easily reach five figures. Incidentally, Thomas H. doesn't make such a small figure in himself. About 250 on the balanced beam, we opine.



MOST men find figures uninteresting—unless they're feminine figures. But Leon M. Estabrook dotes on figures of all kinds. He is chief statistician for our eighty-billion-dollar farm industry. And he has 200,000 figure collectors scattered all over America. He can figure up our wheat crop months ahead of anyone else. Estabrook started life as a country school teacher. He knows more about an adding machine than the man who invented it, and he can make it do more tricks than an Italian with a monkey on a stick.

HERE'S one for the boys and girls—Dr. A. C. True, director of the States Relations Service, under which all the kid club work comes. Through 1,700 county agents and 1,000 home demonstration workers he sells "service" to you farmers and your wives. The map shows how his staff is scattered—each dot represents a field worker. Use your imagination, or count the dots if you have time. Each dot spells money being earned or saved through advance ideas "sold." It won't take you long to figure him into the ten hundred thousand class.



tered—each dot represents a field worker. Use your imagination, or count the dots if you have time. Each dot spells money being earned or saved through advance ideas "sold." It won't take you long to figure him into the ten hundred thousand class.

EVER wonder why European plant diseases and pests so seldom leave their own countries and invade the United States? Dr. G. L. Marlatt, chairman of the Federal Horticultural Board, who is shown here inspecting suspected plants, is the answer. He's the "big gun" of our agricultural coast defense. His eye is sharp, and at the slightest rumor of an invasion he "closes our ports." It's hard to estimate how much he saved American corn growers alone when he quarantined the whole darned world to keep out the European corn borer.

WE FARMERS who think we're busy when we take care of a hundred or so acres of land ought to take one look at this calm individual in the semi-military garb, and thank heaven that we haven't got his job. He's Col. W. B. Greeley, chief of the Forest Service, and all he has to do is keep watch over 155,000,000 acres of our national forests. When he isn't busy he spends his leisure time making them produce lumber, and keeping them spick and span for your vacation. Lots of men wouldn't take his job for a million dollars, though he seems satisfied with quite a bit less.



ALL the cows crowd up close to the fence when Dr. John R. Mohler, chief of the Bureau of Animal Industry, goes by. Their bovine sadness is caused by the fact that he and his assistants have attended the slaughter-house funerals of so many of their beefy friends and relatives. About seventy-five million slaughtered animals have passed under his official eye and nose in the last year. Dr. Mohler and his men make sure that none but Class A meat gets on the market through the packing houses.



"Good Corn Comes From Knowing Your Type and Sticking to It"

By A. I. Foard

County Agent of Scott County, Missouri

THIS is the story of E. J. Mahoney, the "Corn Prince" of Dexter, Missouri. In the last ten years his seed corn has won him about \$3,500 in cash prizes, and ribbons and medals galore.

Incidentally, Mr. Mahoney is president of the county farm bureau, a leader in boys' and girls' club work, and altogether the kind of man we like to find in the business of farming.

In this article he will tell some of his seed-corn secrets, and something of the club work he takes so much pride in.

Mahoney farms an 800-acre farm in the rich alluvial reclaimed section of country once known as "Swampeast Missouri," but now a fertile valley of 3,000,000 acres of fine farming land. He is a tenant, a renter if you please. He doesn't own a foot of land, but he is more prosperous and progressive than many a farm owner.

I found Mr. Mahoney in his cornfield with a bag about his shoulders, going from stalk to stalk, stripping back the shucks and carefully examining each ear. He was in what he called his corn-breeding plot of forty acres. Here is where he selected his seed for his corn crop next year, and that was why he was so painstaking about it.

His favorite corn is Boone County White, although he has won big premiums with Ried's Yellow Dent. When I asked him why he favored Boone County White when some of his neighbors are sticking to Ried's and St. Charles White, he said:

"I like it because it makes more corn per acre than any other variety. If I could get a bigger yield with other varieties I would raise them, but I have tried all the leading varieties, and it's Boone County White for me."

Mr. Mahoney came to Missouri twelve years ago from southwestern Indiana. He was not a rich man, so rented a farm in Missouri, and is still on a rented farm. He has spread out considerably since coming here, and is farming a larger area. Landlords are not very anxious to have men like Mahoney leave, so he has always found it more desirable to rent land than to own it.

I ASKED him how he grew his corn, and if he had any advice or information that would be well to pass around to other farmers interested in raising good corn. This is his story, practically word for word:

"The first thing to consider is type. A man must know the type of corn he wants to grow, and he must stick to it. It doesn't make so much difference what variety you raise, but you *must* know the type of the particular variety, and you *must* breed for it.

"I grow from 250 to 400 acres of corn every year, but my breeding plot consists of only 15 to 40 acres. For this breeding plot I select every ear of the seed very carefully. As soon as the corn in this plot begins to tassel, I go in and remove every stalk that does not show a good silk just at the same time the tassel comes out. I believe this plan is much better for securing a prolific strain of corn than the detasseling of every other row.

"In the long run, yield per acre is what I am after. I breed for quality as well as quantity, but by combining quality with quantity in selecting seed corn I get the desired results.

"As to the selling of seed corn, I think the seed houses could do much better than they do. Not infrequently the seed corn sold comes from the ordinary field-run or crib-run corn. This is a mistake. The seed houses often buy up corn that tests well, but that is all the consideration it is given.

"I am very particular about the seed I plant and the seed I sell. I never sell any seed corn that is not grown on my breeding plot. I always have more orders for seed corn than I can fill. I could go into my crib and get the field-run corn and sell it probably to the satisfaction of my customer, but not to myself. When the corn from my breeding plot is gone I turn down the balance of the orders.

"When the corn is gathered from this breeding plot it is taken to a storage-room, and every ear of it is put on a rack or strung

up on strings so as to get plenty of fresh air and provide for a healthy germination.

"Sometimes men order corn from me in the ear. Then I take three or four grains from every ear in the order and mail them to the man so that he knows just what he is getting, and then he can test it if he wishes. I tell all my customers that if they are not absolutely satisfied with the corn when it arrives to send it back at my expense and the money will be refunded. But I can afford to do that, for I have never had any corn returned.

"Seed-corn growers must be honest above all things. They are not all that way, but most of them that I know are. I always go up to Farmers' Week at the agri-

and better-to-do tenants. We realized that we ought to increase our membership fee. Our state organization adopted the \$5 fee, but we felt that there is such a difference in the individual belongings of our farmers that we would adopt a sliding scale fee, allowing our small farmers to become members at \$2, our medium-sized farmers at \$5, and our big farmers at \$10. We didn't know how it would work, but tried it out, and it worked like a charm. We feared that everybody might want to get in on the minimum fee, but it didn't work that way. Instead, many of our leading farmers felt that \$10 was not enough for them to pay, and they came along with \$25, and some with \$50. We materially increased our

and simply wanted a statement from him about his neighbor, he told me that he considered Mr. Mahoney one of the very able thinkers on all agricultural problems, and that he was the most useful man in his neighborhood.

Then in Dexter one of the leading business men gave me his views.

"This man Mahoney," he says, "is always boosting every forward movement that comes up. He is one of our most useful citizens. He has established an honesty and standing in the seed-corn business that is a great lesson to our farmers. He could have been a very rich man if he had been of a grasping disposition.

"He knows corn and how to raise it and make money out of it. He has been the leading factor in improving corn in southeast Missouri. He came here without money, and he is still a renter, but he is well equipped financially. He always has money in the bank and some in his pockets. He is always ready to chip in with his money and his influence on any sort of movement for the betterment of the community."

How King Markets His Lambs

"WE BELIEVE that our lambs are most profitably handled when we hurry them off to market during the month of July, which is generally a period of high prices," stated Robert A. King, a young farmer from Fayette County, Ohio. "Our flock is just an ordinary farm flock of 40 ewes of mutton breeding. We are not specializing in sheep, but simply keep a small band of ewes to clean up the waste forage about the farm; nevertheless, they have proved very profitable."

This young farmer plans to have his ewes lamb by the middle of March. While suckling the lambs, the ewes are well fed on alfalfa hay, corn stover, and a grain ration of oats and corn in equal parts, so as to produce plenty of milk for their young. From the very first the lambs are encouraged to eat grain with their dams, and by the time they are two to three weeks of age they are nibbling from the feed trough. After getting the lambs started on grain they are liberally fed twice each day on a mixture of corn and oats. The lambs are permitted to run with the ewes on good blue-grass pasture until they are marketed in July.

Last summer King's lambs averaged 83 pounds, and sold for \$17.25 per hundred pounds. King believes in hurrying them off to market early, because the cheapest gains are made when the lambs are nursing.

Furthermore, the market is generally better for the early lamb than later in the season, when there is a big run from the corn-belt farms. King sells his lambs when they have the bloom and fat of a baby lamb, which is generally lost as pastures dry and the lamb becomes more mature. The market appreciates these fat, handy-weight lambs more than the run of coarse, staggy, thin lambs from the average farm flock.

One reason for King's success is the fact that his ewe flock has the early maturing qualities of the mutton breeds, and a purebred Southdown ram is always used. Without this early fattening quality, King could not feed as he does. Another point that helps him to top the market is the fact that his lambs are docked and castrated. The buck lamb, according to King, is discriminated against. At one time he did not think it necessary to dock his lambs, but after losing a long-tailed lamb with complications resulting from the scours, he became convinced that the few hours spent in docking are well spent.

King has great faith in his plan for marketing lambs. He sees no reason why any owner of a small farm flock cannot raise lambs in a similar manner, providing he has sufficient mutton blood and early maturing qualities in his flock.

C. T. CONKLIN.



E. J. Mahoney in his corn-breeding plot, studying type and selecting seed corn

cultural college. I never miss that trip. I hob-nob around with the other corn men, and I find them a fine lot of fellows. I never fail to get a few pointers that help me when I get back home."

I asked him why he left Indiana and came to Missouri to raise corn, when those Indiana men seem to be leading the whole country in corn-breeding.

"That's an easy one," he said. "I came to southeast Missouri because the opportunities seemed better at that time for a poor man. The land down here is richer, and I could get a better renting deal. Then, after I got here, I learned some other things about it. I have found southeast Missouri the best place to grow seed corn I have ever seen. Corn going from here seems to have a wider adaptation than from most other places. We can send corn 250 miles north and it does mighty well. This was thoroughly demonstrated in 1917, when we shipped a world of corn from this section into Iowa, Illinois, and Indiana. Then we can ship it south, and it does well as far south as they grow corn."

This ended our conversation about his immediate farm, and we branched off onto the country farm bureau, boys' corn clubs, and the like. I found him right up to the minute on all rural problems, and greatly interested in the state and national farm bureau federations. I learned that he was president of his county farm bureau, and that he was the originator of an increased membership fee on a sliding scale plan which had been put into effect in his county.

"Our plan is this," he said: "We have about 80 per cent renters on the farms, and many of them are not able to pay a membership fee in proportion to the landlords

number of members this way, and of course got a much larger sum of money to do business with. The funny thing about it is that all the counties around here have adopted the same plan."

I knew he was interested in the boys, and as president of the county farm bureau had done considerable work in developing and organizing boys' corn clubs. He was glad to talk about this.

"Oh, the boys are our greatest asset," he began; "I like 'em. We are putting on a boys' acre-yield contest this year in every township in the county. We are going to get one of the banks to furnish purebred seed corn for every boy who will enter the contest. Then the other banks are going to donate money to send the winner in each township to Farmers' Week next year. We are going to require that the boys show a ten-ear sample of their corn at the county fair, and the one getting the highest score in each township gets the free trip. Of course, yield per acre will count most in this contest. We have eleven townships in the county, and that will mean that eleven boys will attend Farmers' Week. That will further mean that eleven daddies will have to go along to take care of the boys. In that way we will do a lot of good educating these daddies as well as the boys."

ON MY way over to Dexter, the county seat, after my visit to Mahoney's I met one of Mahoney's neighbors, and I asked him what kind of a neighbor Mahoney made, and if he were really doing anything worth while in his community. He stared at me as though I had gone daffy or become an agent of an oil stock company, or something equally bad; but when I assured him that I was at peace with all mankind

This is the Birthday Month of Riley, Our Favorite Farm Poet

Manhood

By Joseph E. Wing

A MAN, when he is alone, most interests me. When I see him alone I know more nearly what he really is. When he acts alone you know that these acts spring from *will inside of himself*. You know then how much of his doing is *himself* and how much of it the result of his desire for the respect and admiration of other men.

On this earth we have not much opportunity to live alone, and it is a fact to be deplored. All strong natures live much alone. Even when surrounded by crowds of men and women, they are as though alone, for they are thinking largely their own thoughts and living largely their own lives.

I have often envied the opportunities of olden days, when men lived the lives of hermits, dwelling off in some forest or on a mountainside, when they cultivated a little garden and lived their lives—sometimes, at least, in useful labor. Some of them were scientists, engaged in the absorbing work of interpreting the laws of nature, then little understood, and some engaged in earnest thought of the spiritual and the beautiful side of the world; they learned to know well the trees and flowers and the skies and water, and to see in them and in the universe very much more than those who dwelt in cities could see. From them came great and imperishable things in literature. I do not know that art ever came from a hermit's cell—art is an expression of the human that mingles with his fellow man and sees in him possibilities beyond what others dream. But great things in literature come from within, from men communing with the quiet world, learning to love it and understand it, and at last to express it.

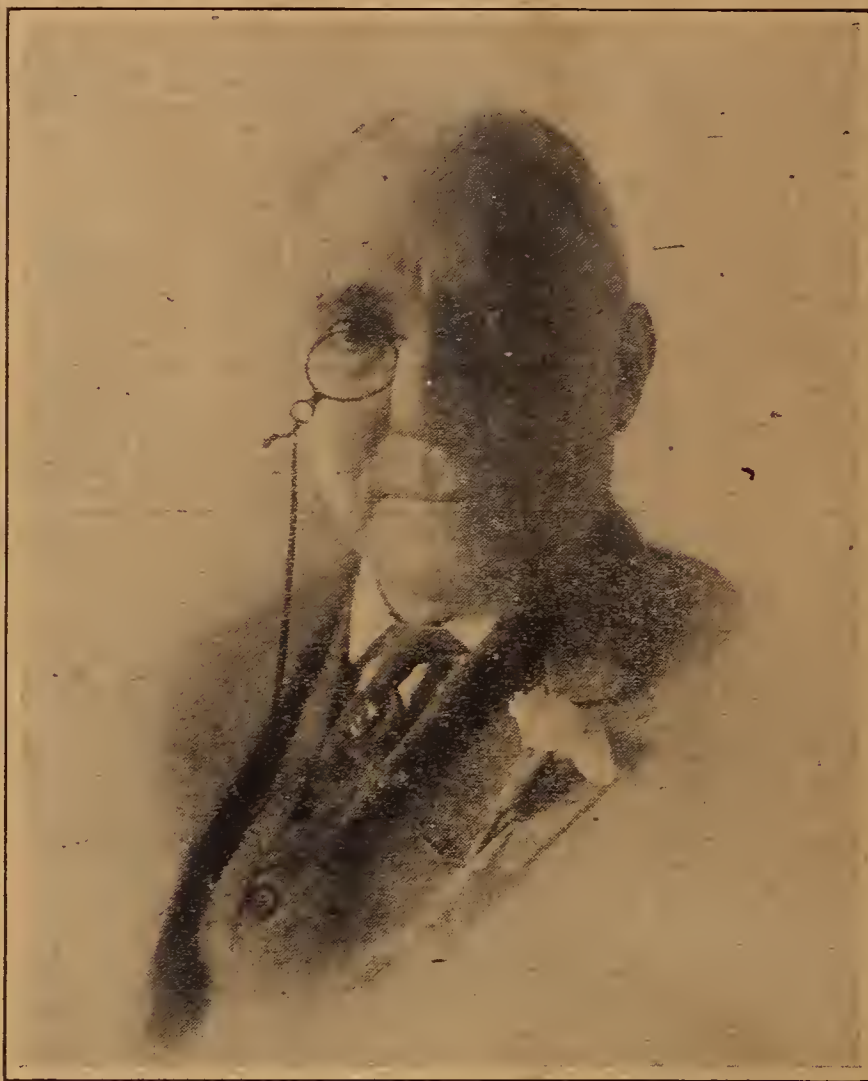
FROM such a life came our most wonderful sacred poems and songs. Do you think that any man, or any company of men, could in this age of steam and daily newspapers write a "Te Deum"?

What the man did when he was alone might have been good, but naturally it was often selfish. There are exceptions to that, of course; there are records of men, hermits, who voluntarily maintained roads and bridges and hung lanterns to mark fords for those who crossed rivers. These men had either a strong inherited sense of their brotherhood to man or else had once lived with men, and learned how hard the pathway is for many, and longed, with love in their longing, to make it easier for them.

Why does he do it? If it is a worthy thing that he has done, you may be sure that there has been love behind it. He has had in his heart love for one woman, maybe, for wife and children, maybe. Either motive is good and natural and necessary, but if he has done a thing that we call really and truly great, he has in him more of love than that which goes out to wife and children; he has felt a flooding love through him that took in a large part of the human race.

There comes a time in every human soul when there is a feeling: "Why, I am a part of this wonderful world. I must set out to see what I can do to make it as happy and as pleasant and as clean as it can be."

If he has loved wife and children and his near neighbors, he has made a useful citizen, and done all that we could reasonably ask of him. If he has reached out and loved more of mankind than that, and has been recognized and given opportunities, he has developed into a true statesman. And if he has had a very great love, with also a compelling strength that never tired, and a hatred to go with it, of all that hurts his fellow men, then you have a *man*.



James Whitcomb Riley

Photo by The Mecca Studio

By Robert D. Dumm

I WENT among the people; I learned their wants, their sufferings, their joys and I put them into rhyme."

In these simple words did James Whitcomb Riley, America's most beloved poet, whose sixty-seventh anniversary is observed this October, explain the genius that lay behind his ability to put into verse the very soul of the people. That he cared nothing for glory, but loved with a whole heart just plain, everyday folks, is shown throughout his works.

Riley's acquaintance with "folks" began on October 7, 1853, when he was born in the little Indiana town of Greenfield, which lies about twenty miles out of Indianapolis. Surrounded, as he was there, by the kind of people whose deepest feelings he could best portray, Riley had every opportunity to become perfectly familiar with the straightforward simplicity of America's homely folks.

There isn't space here to go into his boyhood, but of his early impressions you can learn much by reading "The Old Swimmin' Hole."

As Riley approached man's estate, his father, a country lawyer, planned to have him study for the bar; but he was doomed to disappointment. After a brief struggle with Blackstone, Riley ran away from home with a patent medicine and concert show, to take up a more exciting career as a bass drummer. Later he became a journeying sign painter, only in time to return to Greenfield, where on a local paper he had his first experience in journalism. The home paper failed, and Riley went to Indianapolis, where he secured work on the Indianapolis "Journal." His first verse was printed by that paper under the pen-name of B. F. Johnson of Boone, but later he used his own name.

When success was assured, Riley once more returned to Greenfield, where he lived in the old home among his boyhood memories, amid the people he knew best.

Among his works which bring out the life and hopes, joys and sorrows of "his folks" are "Poems Here at Home," "Afterwhiles," "Old-Fashioned Roses" (a verse from which was reprinted in the June issue of FARM AND FIRESIDE), "Pipes o' Pan," "Green Fields and Running Brooks," and "Riley Farm Rhymes."

The latter years of his life were not so pleasant for him as they might have been, as ill health shaded the joys of approaching old age. Still, during these last few years he gave to the world some of his best work. On July 22, 1916, at the age of sixty-three, Riley died—to the genuine sorrow of an entire nation.

Following is Riley's own poem on the month of his birth:

OLD October's purt' nigh gone.
And the frosts is comin' on,
Little heavier every day—
Like our hearts is thataway!
Leaves is changin' overhead,
Back from green to gray and red,
Brown and yellor, with their stems
Loosenin' on the oaks and e'ms;
And the balance of the trees
Gittin' balder every breeze—
Like the heads we're scratchin' on!
Old October's purt' nigh gone.

I love old October so,
I can't bear to see her go—
Seems to me like losin' some
Old-home relative er chum—
'Pears like sort o' settin' by
Some old friend 'at sigh by sigh
Was a-passin' out o' sight
Into everlastin' night!
Hickernuts a feller hears
Rattlin' down is more like tears
Drappin' on the leaves below—
I love Old October so!

Can't tell what it is about
Old October knocks me out!—
I sleep well enough at night—
And the blamdest appetite
Ever mortal man possessed,—
Last thing et, it tastes the best!—
Warnuts, butternuts, pawpaws,
'Tles and limbers up my jaws
Fer raal service, sich as new
Pork, spareribs, and sausage, too—
Yit, fer all, they's somepin' 'bout
Old October knocks me out!

Blossoms

By Joseph E. Wing

WHEN, once, I lived in a desert country, very like, perhaps, the land where our Saviour lived, there grew in a ravine near our trail a dry, dead-looking shrub. I rode by it often, and sometimes wondered whether it was dead or alive. The leaves were few and shriveled, and the branches gnarled and dry. Judge then, of my surprise when one day in spring I found this shrub all ablaze with delicate bloom! Every little dry twig was decorated, all so graceful and so sweetly perfumed that I could not pass it without stopping to admire it.

And as I sat looking at it in wonder, all at once it came upon me that there was something to set me hoping, that my own life, which had seemed so dead, might some day blossom out again, under the warming influence of God's love. And I know now that God took this way of reaching my soul, which was getting hard and callous and selfish, and that God speaks to us all through these simple things of the woods and fields, if we will but stop and look and listen.

The flower is the beginning and the end of everything. The tiny grass lives to see its flowers bloom and its seeds form, the rose and the lily live for the same end, the maple and the rugged oak tower up and stand the fierce gales of winter, that when spring comes they may bear aloft to the sun and breeze their show of blossoms and produce seed again of their kind. And these flowers of spring, they are not the work of a few short sunny days. All last summer the plants that were to bear them were storing away in root and stem the stores of plant food that was to make them bloom, and all the cold, dark winter, hidden snugly away, perhaps, under the fallen leaves the plant has waited, with faith that the warm winds would come and the snows of March melt away and the suns of April come; and then they pushed out their buds and bloomed out in all their freshness and loveliness.

THERE is a lesson there, the lesson of preparation, of patience, of waiting. The time will come when each of our lives may bloom out in beauty, let us only be ready when the winds of Heaven whisper to us and the Son of God's love warms our souls, and we may unfold too and blossom out in beautiful deeds and thoughts that will gladden many a soul about us, just as these little flowers we hope will gladden the poor, sick, weary children in the dreary hospital of the city. A little boy said to me one day:

"I would like to know what God thinks about."

"Why, my boy, that is easily answered! Every flower has been a thought of God. Consider that! Learn to study these flowers, is it not indeed as much a command that we 'Consider the lilies' as any other command? Ought we not to plant lilies where we can see them, and where others can see them? Ought we not to let the flowers of love and kindness and charity bloom out in our own lives too?"

"Christ could have taught us from books. He knew better. Instead He used reference to the simple, homely truths that are always with us. The birds interested Him. He tells us of the sparrows that not one of them falls to the ground without the notice of the Father. Can you see the Master, walking reverently through the fields, a lily in his hand, noting the birds, the grass, and the flowers, saying to his followers:

"Consider the lilies, how they grow. They toil not, neither do they spin, yet Solomon in all his glory was not arrayed like one of these."

How I've Built a Butter Business and a Purebred Herd from Nothing

By Mrs. L. E. McClung

In an interview with Ross B. Johnston of West Virginia University, Morgantown

HOW did I get started in the dairy business? Well, it was really by accident. After I was married and had moved to Greenbrier County, Mr. McClung had to be away from home part of the time, and I wanted something for myself and the children to do on the farm. I decided we should keep more cows. I had always liked Jersey cows. Why, even when I was a small girl I never passed a Jersey cow without wondering if we would ever have a lot of nice-looking Jerseys like that on our farm! So it was certain from the start that our cows would be Jerseys. That is point No. 1. I knew what I wanted.

We got a few cows and began to make butter. We were soon making more butter than we needed for home use, and we sold the surplus locally.

My first city contract came from a Huntington woman who visited us and wanted my butter for her own use, and said that she would sell all I had if I'd send it to her. The next order came from a woman who took an automobile trip with us and liked our butter. We soon had more market than butter.

The fact that our butter made good to a greater extent than we had expected induced us to go ahead, so I still regard our entry into the dairy business as a real accident. At first we had some trouble in marketing our product, but better roads and the parcel-post system solved that problem readily.

From the very first I was enthusiastic about the work. We had only grade cows to start with, of course, but I kept reading auction and sale lists all the time. I wanted to build up our herd as soon as possible. One day I had a chance to buy a purebred St. Lambert Jersey calf for \$30, and I jumped at it. It was butter money that paid for the calf. That gave us a purebred sire with grade cows, and was sufficient to start herd improvements. We knew that we could not do it all at once. Our next sire was a grandson of Hector Marigold. Our present one is a Financial King Bull.

OUR next step toward a purebred herd was the result of another accident: There was a man in our county who had overloaded himself at a Lynchburg Jersey sale, and who brought home a number of purebred Jersey cows. There were five of these cows which dropped heifer calves, and he sold them to a local dealer. This dealer knew my fondness for purebred Jerseys, and decided that I was a good prospect. When he offered me the five calves for \$200 I did not resist. I counted out some more butter money and bought them.

Goodness, you never saw such a starved-looking bunch of calves in your life! But we fed them up, and soon their thin sides rounded out until they were as nice-looking animals as you would want to see. I worked up their pedigrees, and you can imagine how proud I was of them. It is odd that they, in turn, each dropped a heifer calf, and their daughters later also added heifers to our herd.

At present we have about 40 cows and heifers in the herd, of which number sixteen are producing winter milk. About half of them are purebreds, and the others high-grades. We are selling off the cows as rapidly as we can spare them, and gradually working out everything but the purebreds. I belong to the Greenbrier Cow-Testing Association, and believe that it has done a great deal for me in helping locate my unprofitable cows so I could dispose of them. We veal most of our male calves, but keep the heifers.



Mrs. McClung and her associates on the executive committee of the West Virginia Farm Bureau Federation

What's Success Good For, Anyway?

ALTHOUGH Mrs. L. E. McClung, the representative of the farm women on the executive committee of the West Virginia Farm Bureau Federation, says that her dairy at Journey's End Farm has started by accident, it was *not* accident, but long and hard work, that has enabled Mrs. McClung to build up one of the best butter dairies in West Virginia, at Rupert, in western Greenbrier County.

This dairy is the only one of its size in full charge of a woman in this State, and it has more than a state reputation for its product and for its excellent business management and method of marketing.

Her experience proves that we average, everyday folks can get started in purebreds and profits if we will think out our problems and watch for the opportunities that come our way.

Of course, the real flower of Mrs. McClung's success is in the home that her good butter and cattle have enabled her to have. That, after all, is what you and I are working for—the things money will buy, not the money itself.

Here is what one of the home-demonstration agents said after seeing the place:

"We came out on top of a hill that overlooked the river valley in which lay the McClung farm, upon a view of the most beautiful picture, painted by Nature's hand, but assisted by the hand of man. It is almost the ideal country home."

"The home is the most attractive country home

I have ever seen. It is not the kind that a wealthy city person might build in the country, stiff and out of harmony with its real setting, but the homey sort of a place that only a person who knows and loves the country from long association could make.

"The house rests on top of a wide knoll above the road, and has a well-kept lawn that sweeps down on three sides to the road. No fence mars its rich green beauty. To the left of the lawn, a row of shrubs cuts off the view of the stables and granaries, and banked against this hedge are rows of narcissus and scarlet sage. White and purple violets, English daisies, and cultivated dandelions are sprinkled everywhere about the lawn, hit or miss, in the most gorgeous color combinations. A few stately old apple trees furnish shade. There is not the slightest hint of formality in the whole scheme of decoration, which seems to fit so perfectly into the general landscape that it appears to have grown there naturally."

"The house itself is just an old-fashioned house made over to meet modern living ideals. It is only a modern house so far as conveniences are concerned. Electric lights and running water are first on the list. It has a great open fireplace, a piano, phonograph, tables of magazines and papers, and books, books, books, everywhere. Talk to Mrs. McClung and you will find that she has read most of them, too."

THE EDITOR.

All our milk goes into butter, our average weekly production being about 100 pounds. The skim milk goes to our calves and hogs.

We sell all our butter on yearly contracts to the Charleston and Huntington merchants, and we only have to take the butter as far as our mail box. I pack the butter in pound prints, neatly wrapped in waxed-paper wrappers with the printed legend, "Greenbrier County Farm Butter made by Journey's End Farm." It is sent out in a covered pail by parcel post. Although we live 200 miles from our real market, we have always had a demand for every pound of butter produced, and frequently have received three cents more on the pound than prevailing creamery butter prices.

AS WE make shipments three times a week, the butter is sure to be fresh when it reaches its destination, if handled properly en route. I stand back of every pound of our butter, and guarantee its quality. Payment is refused for all unsatisfactory butter, or it is shipped back to us at our expense; but only in a few cases have we had complaints.

I have never tried to make individual shipments to consumers in either of these two cities.

I don't believe a farm woman has time to send out individual shipments of a pound or two to a large number of persons. The farm woman naturally has to do most of this sort of work, and it would take all of her time. The additional amount received would not pay for the extra postage and the additional time required. While there has been a great deal of agitation to get farm folks to market their stuff by parcel post to the consumer, I don't think that it offers much advantage.

A square deal is the first thing for the farmer to give who wants to find a market. Put up a good article attractively, and you need never fear that there will not be a hungry market for it. I have found there is always a market for good farm stuff, no matter where it is raised.

We milk both by hand and with machinery. Our machine has given us complete satisfaction, and we are very glad to have it. Where there are no more than 12 or 15 cows, hand milking is the best, for it is more trouble to take care of the machine than it is to milk that number of cows.

We have found that the cows like the milking machine better than hand milking, but the person who runs the milker must be an intelligent, trained

man, or you are likely to have your cows injured in some way. We have found only one real objection to our milker, which is that heifers taught to the use of the milking machine object to being hand-milked.

We have a 70-ton silo that is our big mainstay. We raised sunflowers to some extent, but did not put them in the silo, using corn silage entirely.

We buy some oats and other material from outside, including, of course, cottonseed meal. We buy bran from a local mill.

Our dairy farm comprises about 250 acres. There were 75 acres tilled last year, 12 acres of which were in corn to fill the silo. Half of the corn filled the silo. We also raised buckwheat and hay.

The farm is well equipped with machinery. There is electric power for almost every kind of work possible. Labor-saving machinery is used extensively in the fields as well as in the farm buildings. My boys believe in using the latest farming devices.

NOTE: We hope, in an early issue, to publish Mrs. McClung's story of how she makes such good butter.

EDITOR.



On the Big Grade

An episode which threatened the lives of three hundred people, a railroad's reputation, and the happiness of Shirley Winston

By Eugene Jones

Illustration by Leslie Benson

ONLY afterward, when the whole thing was over, did I feel any thankfulness for having been present at the first scene in that little melodrama which not so long ago threatened the lives of three hundred people, the reputation of the Mountain Division, and the happiness of Shirley Winston. Only afterward with Shirley safely married and Pritchard dead, could I fully realize how close I had come to ending summarily the career of my oldest acquaintance and most intimate confidant—myself!

Just what took me to the division superintendent's office on the evening of June 11th doesn't matter. Bowlson, better known as "Old Grouch," often called me up on the "carpet" for the sake of an argument. Bowlson would rather argue than eat, and he was one of the heaviest eaters I ever ran across. He picked on me because I was old enough to hand him as good as he gave, and hot-headed enough to let his ridiculous remarks rile me.

He used to sit hunched in his swivel chair, his eternal cigar chewed to a stub, his yellow teeth fast in it with a grip as stubborn as his nature. He used to sit like that and grin at me. Bowlson's grin affected people differently; it infuriated me, and he knew it—which made him grin the more. But way down deep under all his grouchiness and his crankiness lay bed-rock qualities. He'd saved the Mountain Division lives and money in the past; he would do so in the future—if he didn't die of natural sourness.

Well, this particular evening we were at it as usual when the thing happened. The office of the division superintendent was on the second floor of the depot, opening on a gallery which circled above the waiting-room. Suddenly Bowlson took his cigar from his mouth entirely—such a startling departure from habit that I gasped.

"Listen!" he rumbled, nodding toward the closed door. "What's Pritchard doing up here? He's due to handle the Limited right now."

In the hall, filtering to us through the hubbub of the depot noises, came the sounds of scuffling feet, accompanied by a man's voice raised to a shrill whine of anger. The next instant they were in the room—all of them—and Bowlson forgot me.

Pritchard, the engineer of the Limited, was drunk, but not too drunk to strike viciously at Jim Duval, who had him by the shoulders. Behind Duval stood Shirley Winston, white of face, her eyes dangerously bright, her hair a little disordered. The girl closed the door even as Duval flung Pritchard away from him.

From the side lines I saw Bowlson put his cigar back and clench his teeth upon it; saw him grasp the situation in one swift, circling glance like the sweep of a flashlight. All at once a different Bowlson faced them, a Bowlson who weighed every detail, a man behind a mask which no longer grinned but offered instead deep lines imprinted by ten years of nerve-racking service. For a moment nobody spoke. Then, ignoring the rest, the superintendent turned to Shirley.

"Well," he growled, "what's wrong?"

At that Pritchard lurched forward.

"I don't give a damn what she says—" he began,

but Bowlson's interruption came as sharp as a thin knife blade.

"You shut up!" Then, with a wave of his hand, "Go on, Miss Shirley."

The girl, resting her fingers on the banistered rail, met his gaze squarely; her voice quavered a little.

"I WAS coming to meet my father up in the dispatcher's office. You know you have to pass along track ten. The Limited was taking on passengers. When I reached the engine I saw this—this man," she indicated Pritchard scornfully. "His fireman was arguing with him. He was drunk. I watched him for a while. After a bit he climbed into the cab. Then I understood. He was going to take the Limited down, drunk! At first I couldn't think what to do; the conductor had waved his lantern. . . . I thought of all those passengers—women and children—and the big grade, and—and I guess I screamed. Then Jim came running to me. He was across the platform and heard me scream. The engine was moving, but he understood and jumped aboard, and there was a fight. . . . I think, Mr. Bowlson, Jim saved the Limited."

"Why didn't the fireman stop Pritchard?" asked the superintendent of Duval. "Because," said Duval with a short laugh, "he and Pritchard got drunk together—now and then."

"Was he soused too?"

"N-o; not quite."

Bowlson's whisper "Ah!" was like a tiger's caress. His eyes slowly swept to Pritchard, fastened there coldly.

"You're fired," he said distinctly. "Come back for your pay to-morrow. I've been watching you for a long time. So you'd take the Limited down, drunk, would you? You'd risk three hundred lives and thousands of dollars' worth of rolling stock? You'd risk the reputation

of the Mountain Division that made you? I'll black-list you from one end of the country to the other. Get out of here, you—cur!"

Not once had he raised his voice, yet in each metallic syllable, clicked off like the dots and dashes of a telegraph instrument, there lurked a strong man's contempt.

Pritchard's face turned a dull red; he swayed a little.

"All right!" he shrilled, "That's all you got t' say? Got any more? You'll be sorry f' this. Wait an' see!" He reached across the railing and tried to shake his fist in Bowlson's face, lost his balance and was jerked to his feet by Duval.

"Hadh't you better go?" reminded Duval. "Unless you'd rather be thrown out?"

For an instant the two young men faced each other; then the ex-engineer of the Limited fumbled for the door, found it, reeled through, and banged it behind him. Bowlson picked up the telephone.

"Give me Johnson's office!" he bel-lowed. "That you, Johnson? Just fired Pritchard. Drunk! Put Smalley on number sixteen. Phone dispatcher so he'll get out his orders straight. All right. G'by!"

For several moments afterward he sat chewing on his cigar, apparently oblivious of the girl and man before him.

Miss Winston spoke:

"You don't need me for anything more? I did right, didn't I?"

He came to his feet like a flash.

"Good God!" was all he said, but he took her hand in his. When she had gone he turned to Duval.

"That's a girl worth while! As for you, well, you hardly need to be told you saved the Limited. I know your old man. I would have expected as much of you. Guess you want to be moving if you're going to wildcat down and pick up seventeen."

Duval, a trifle embarrassed, thanked him and withdrew.

That left me to come out of my corner like a thief. Bowlson eyed me aggressively.

"Oh," he rumbled, "You still here? Don't mind listening to other people's business, do you? Never mind!" as I formed a retort, "you're old and curious, I guess."

"Mark my words," he continued, switching with his accustomed speed to the subject uppermost in his mind: "H. J. Duval's got sense even if he is president of this one-horse dummy railroad. That's the way to teach a boy the game. Let 'im learn from the bottom up. Jim's taking hold; he's done everything from flagging on a freight running extra, to handling a passenger train. In a year from now I'll have him ready to hold down any office job the Old Man picks out for him. Jim's got the right stuff. Understand, you doddering gray-haired engineer, the right stuff!" And, ending a suspicious pause: "I reckon Shirley Winston's pretty enough for any railroad magnate's son—and then some!"

I left him there, chewing on his cigar, gazing into the waste-paper basket, with a scowl on his outlandish face and a smile in his heart.

SHIRLEY WINSTON was the daughter of "Pop" Winston, chief dispatcher of the Mountain Division. Back in her school days she used to bring her lunch to the yards and eat it with me in my cab; and many times I've seen her off to her classes with a ruined dress. Oh, I did my best, but she knew what she wanted. Yes, she wanted to learn railroading! That was the surprise of it—a girl hankering after a steam throttle and thrilling to the tune of a gong whistle.

Her father shook his head over her more than once, saying she should have been a man, and prophesying all kinds of disaster.

Nevertheless he let her come. He did more: he took her with him, taught her about train sheets and automatic blocks and the handling of freight. Later, when she finished school, she got a job in the station master's office—not because she had to, mind you, but because she wanted it. Then once in a while she would ride with me or some other engineer, and when my old black horse wasn't dragging anything but the tender I'd break regulations and turn the throttle over to her. About the time Shirley became of age she could actually handle a train.

Now you might figure a girl like that would be of the sort that wants to vote and wear pants and make political speeches, yet I have never laid eyes upon a more delightfully feminine woman than Shirley Winston? Pretty? Why, everybody from the track walkers up to old Bowlson himself worshiped her. She'd drop into the smutty, blackened depot, into the express office or the Pullman office or the dispatcher's office, and it was always the same: "Howdy, Miss Shirley. Have a chair. What's the good word with you? Hear about—" etc., etc., until

you'd suspect her of owning the road. No matter how busy anyone was, she found a welcome. The car clerk had asked her to marry him; so had a half-dozen others. But she turned them down in such a way each felt he was particularly blessed by her undivided preference.

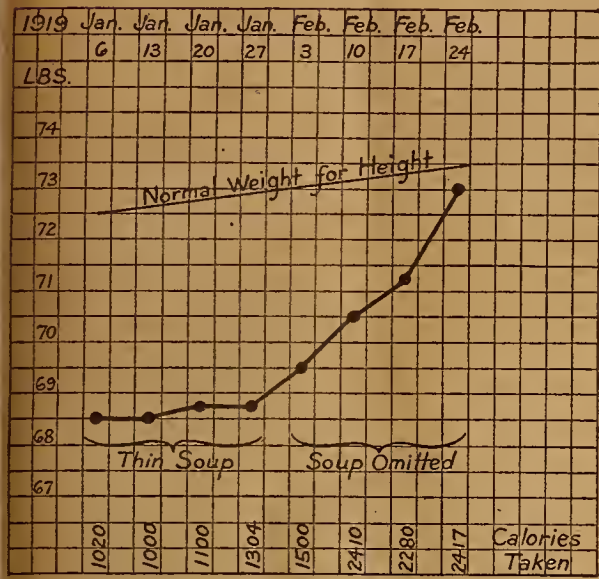
I can only think of one word to describe her—sunshine! [CONTINUED ON PAGE 52]



Behind Duval stood Shirley Winston, white of face, her eyes dangerously bright, her hair a little disordered

Eating and Sleeping Habits That Will Make Your Child Healthy

By William R. P. Emerson, M. D.



Another instance of food prejudice is shown on Lillian's record: given thin soup, which her mother thought was nourishing, she failed to gain. Her diet was changed, and she came up to normal weight. Keep close watch on all the health habits of your child

IN THESE days when animal feeding has been thoroughly standardized, it is surprising that even among farmers so little attention is given to what the child eats, at least after he has passed the age of infancy. Yet measured feeding is the only sure way to build up a malnourished child. He or she should have plenty of the very best of food.

Delicate children invariably take too little food. It is not uncommon to find a child of eight or nine who habitually takes less than 900 calories in twenty-four hours—an amount less than is required by a normal infant of twelve months. As the food habits of older children are fairly constant, a record of all food taken during two consecutive days is sufficient to show whether they are eating properly. If more food is taken one day, a smaller amount will be taken the next, so that a forty-eight-hour record may be considered typical.

For the proper feeding of the child the parent must have some knowledge of food and food value. It is not enough that an abundance of good, well-cooked food is set before the family. It is necessary to know how much is actually taken by the child who is under normal weight.

THE most satisfactory method that has been worked out for measuring food takes as a standard 100 calories, about the amount of food value in an ordinary serving. For instance, it has been found that there are about 100 calories in a slice of bread or a pat of butter. There is the same value in the lean meat of a lamb chop, a slice of bacon, five ounces of milk, a good-sized potato, apple, or orange.

This method gives a basis for comparison, and helps to fix food values in the memory. The knowledge of a comparatively small number of items is sufficient to cover the needs of the average child. Enough information can be acquired in a short study of the table on this page to enable you to raise or lower your child's diet 500 or 600 calories daily, according to his needs, in much the same way that you would adjust the feeding of the farm animals. This method of measured feeding will also suggest a more economical selection of foods by calling attention to the relatively high caloric value of such inexpensive foods as cereals.

A child six to fourteen years of age, who is habitually under weight six or more pounds, requires between 2,000 and 3,000 calories of food daily to make a proper gain and come up to his normal weight line. In many instances an increase in the twenty-four-hour amount of food to 2,500 calories has brought about an increase in weight of from one to two pounds a week. In some cases the amount has been raised to 5,000 calories without causing indigestion. The undernourished child is like one convalescing from a severe illness, requiring two, or even three, times as much food as is needed when he is in normal condition.

A growing boy of fourteen in good health requires a quarter again as much food as an adult, while boys of thirteen to sixteen who are physically active will use 5,000 calories daily. The amount of food needed is measured by the growth to be accomplished and the energy to be spent in work and play.

Our experience has shown almost invariably that in cases of underweight there is underfeeding, and in cases of overweight there is overfeeding. There are many other important factors to be considered, but in all cases of malnutrition one of the very first lines of attack is upon the food situation.

If a prompt advance in weight does not follow in creased feeding, it is probable that some organic disturbance or other abnormal condition will be found to be interfering with progress.

The two days' diet list is of great importance. In the first place, it shows how much food is habitually taken; second, it shows the kind taken; third, and more important still, it points out what the child likes and dislikes. This makes it possible to emphasize in the diet such foods as are agreeable to the child, and thus work along the line of least resistance.

In the case of delicate girls

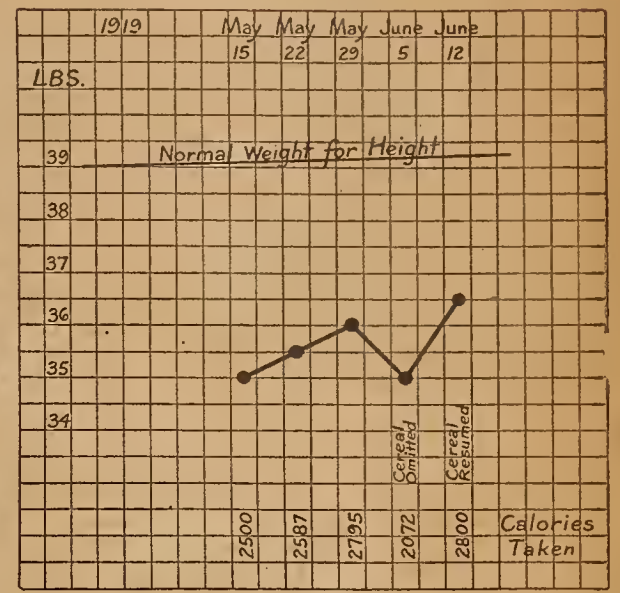


Marie was "finicky" and overactive. She was 11 per cent under weight. Her interest in health was aroused and good health habits acquired. Marie stopped drinking tea and coffee, learned to like milk, and cut down her activities

especially, likes and dislikes, aversions to form, taste, or smell, or the association of certain foods with unpleasant events, may be serious obstacles in securing proper nutrition. Never give medicine in food. This practice at times causes aversions which persist through life, and as these aversions are apt to be foods of high caloric value the effect is all the more serious.

It is not necessary to provide a special or peculiar diet for the malnourished child. If a sufficient variety of standard foods is provided, and the forty-eight-hour record is looked over each week, a few suggestions will be sufficient to insure a well-balanced diet when the child's taste does not of itself select the necessary proteins, fats, and carbohydrates. For example, butter naturally supplements bread; white potatoes balance meat; milk and green vegetables, sometimes called "protection foods," insure sufficient vitamins.

Certain foods are, however, essential to proper growth, irrespective of the child's taste. If milk and cereals are omitted from the diet it is practically impossible to keep the twenty-four-hour amount high enough for continued gain. Every child should have at least a pint of milk a day, and from the great variety of



Curious food prejudices sometimes prevent a child from gaining. Bertha's mother feared oatmeal was too heating, and omitted it during a hot spell, with a consequent loss in Bertha's weight. The cereal was replaced in the diet, and she recovered weight

cereals offered on the market it should be possible to meet every individual taste.

Growing children should not drink tea or coffee. This custom is a national evil. Caffeine and theine, found in coffee and tea, seriously interfere with growth, and this practice is only another way of administering drugs.

THE small appetite is apt to be a provision of nature to prevent overeating when tired, thus causing indigestion. "Too tired to eat" is a frequent condition with malnourished children. Another cause of poor appetite is irregular eating and taking too much food at one time, thus spoiling the appetite for the next meal. In measured feeding at regular intervals no indigestion occurs, and children can eat more in five light meals than in three heavy ones.

The state of the child's mind may also prevent his eating properly. Many children would rather play than eat, and will run from the table before they have taken half enough food. Unhappiness and worry are also causes of a loss of appetite. Sweets taken before meals will destroy the taste for more substantial foods. The serving of too large a portion will often cause the child to eat less than he would if a smaller amount were offered. The "clean plate" is wholesome for the child.

It is fatal to force feeding when the child is not hungry. If he does not feel equal to eating, limit his activities. When he refuses his breakfast, put him to bed, and keep him there until his appetite returns. Be sure that this lack of appetite in the morning is not due to bad air in the sleeping-room, or to a catarrhal discharge that has gathered during the night.

In considering this question of diet, one should never forget the educational value of a well-ordered meal. Fundamental training in courtesy, politeness, and other social habits, as well as good food habits, can all be acquired at the table. The ideal situation is the normal group, consisting of father, mother, and several children, gathered together in sympathetic, happy relationship. While the parents should know what is best for the children, and should see that their program is carried out, the joy and satisfaction of the meal should not be spoiled by constant nagging.

If a child is found to have improper food habits, it is necessary to begin all over again and teach him how to eat, just as one teaches an infant. The bad habit of fast eating is one of the most difficult to correct. Every meal should take at least twenty minutes by the clock, and the child should sit through to the end with the rest of the family. He should be taught to chew his food as long as there is taste in it.

One helpful advice is to give him an after-dinner coffee spoon instead of the ordinary spoon, and thus cut down automatically the amount he can take into his mouth at one time. The child himself will often be amused [CONTINUED ON PAGE 36]

Doubling the Food Value

WHEN it is desirable to increase the amount of food the child eats, it is surprisingly easy to vary the cooking of simple dishes in such a way as to add food value. For example, instead of boiling an egg it may be scrambled, and the cream and butter will provide additional nourishment. Simple puddings may be made with an extra egg added, cereals served with cream, and so on.

Below is shown a typical remodeled meal. For example, a breakfast consisting of the following—

BREAKFAST I

	Calories
Cooked cereal.....4 tablespoonfuls.....	100
Sugar.....2 teaspoonfuls.....	50
Egg (soft boiled).....One.....	100
Roll.....One.....	100
Butter.....Half pat.....	50
Tea (milk and sugar).....1 cup.....	50
Total calories.....	450

can be doubled in value by adding cream to the cereal, by having the egg scrambled (which allows cream and butter), and by substituting a cup of cocoa for the tea, thus:

BREAKFAST II

	Calories
Cooked cereal.....4 tablespoonfuls.....	100
Cream (16%).....3 ounces.....	100
Sugar.....2 teaspoonfuls.....	50
Egg (scrambled—1 egg, 1 ounce cream, 1 pat butter).....	250
Toast.....1 slice.....	100
Butter.....Half pat.....	50
Cocoa.....6½ ounces.....	200
Total calories.....	900

Ten Contributing Causes of Malnutrition

- | | |
|-----------------------|---------------------------------|
| Fast eating | Uneven amounts at various meals |
| Improper food | Washing food down with liquids |
| Too many sweets | Use of milk to quench thirst |
| Irregular meals | Too long time between meals |
| Not enough food taken | Insufficient breakfast |

The Worm with His House on His Back

Mr. Killdeer's strange discovery, and the tale that was told him

By Frank A. Secord

Illustrations by Edwina Dumm

WELL," remarked a killdeer one evening, as he ran along the shore of a pond, to a frog who sat in his way, "do you think you are a moss-covered stone, that you cannot move?"

"I don't know that I have to make way for you!" snapped the frog, without so much as moving an eye.

"You ate my supper!" the killdeer cried. "If I ate anything lately, I ate my own supper," the frog grunted.

"I saw a fat worm right here," the bird continued, "and now, it is gone. That was a mean trick that you played me."

"Bird," Mr. Frog growled, quite out of patience, "I do not have to explain my acts to you or anybody else; but I don't mind telling you that there was no worm here. I have been watching for bugs that like to come to the pond's edge at sundown to skim over its surface and dip in the cool water, and my eyes are sharp. No worm has been here; no worm has passed this way."

At that instant the killdeer drew a deep breath and puffed out his throat to show anger, for he spied the same worm again; and before the frog realized what was going on the bird made a dash, came to a sudden halt, and then whistled loud and long. When he would have seized the worm it disappeared as if by magic. The killdeer's beak rasped against something hard, and that was as near as he came to securing his supper. He looked at the frog, at the hard object that lay upon the sand, and then shook his head. "I," said the killdeer, "must be losing my eyesight, for there is no worm here. You, Frog, did not eat it; for, unless I am crazy, you have not so much as blinked an eye."

"You speak of worms," calmly said the green fellow, "and I am free to tell you that you thought you really saw a worm. You have good eyes, and you are not crazy; neither did I eat any worm. Look!"

Mr. Frog turned halfway around, and with a paw rolled the hard object over on the beach.

"No use to eat me, for I am certain that no stomach could use me!" a very small voice cried, and the voice came from the hard object, which the killdeer examined carefully. "A crinkled stone with a hole in it!" the killdeer remarked, turning to the frog, with a puzzled expression on his face.

"That," Mr. Frog explained, "is a shell, and your worm is in it. It is well that you did not catch the worm, for you never could have swallowed the shell—and that's

what you'd have to do to get the worm." "Oh, dear!" the small voice wailed from the shell.

"Killdeer," the bird corrected, thinking that the voice was trying to call his name.

"Do you mean to tell me that you have never seen one of these things before?" the frog inquired of the bird.

"Come to think of it, I believe I have; but I never saw any worm," was the answer. "The fact is, I never pay any attention to such things."

The frog gulped a time or two and rolled his eyes with satisfaction.

"If you were to accuse me of eating a bug just now," said he, "I would be guilty, for a bug as large as one of my feet just tickled my nose, and the consequence is, he helped toward my supper. What we are talking about is a snail—sounds something like tail, a thing I do not have."

"Well, I wouldn't eat that snail!" exclaimed the killdeer.

"If that is so," the snail squeaked, "I will let you have a good look at me, and if you ever see another 'worm' of my kind you will not make any mistake." Thereupon, the snail stuck his head out of his shell and the bird stood on one leg and examined him. When Mr. Killdeer finished his inspection he laughed, saying: "You are a queer fellow. You are better off than the rest of us, for you have your home on your back."

"That is true," the frog said. "But the bad part of it is, he cannot leave his house. Wherever he goes, there also goes his house."

"Is that so bad?" the killdeer asked.

"Alas," sighed the snail, answering the question, "it is. You would think so too, were you doomed to have to carry your house with you wherever you may wander."

JUST then the killdeer jumped to the water of the pond, snapped his jaws, and moved his wings slightly. The snail drew his head into his shell and the frog hopped a short distance away, sighing deeply.

"Everything is all right!" the bird cheerily exclaimed. "I have now had my supper, so we will visit, if you two agree. But, Friend Frog, why did you sigh?"

"Never mind now," was the answer. "I was fearful that you had eaten one of my family, but I guess not. Come to think of it, Dame Nature called our tadpole children to the rushes to-day to become frogs. Let us visit, let us visit."

"Be sociable, Friend Snail!" the killdeer called to the shell, and again the head popped out.

Continued the bird: "Now that you are safe, I have had my supper, and Mr. Frog is satisfied that I did not eat one of his family, it would be interesting if you would tell us how comes it that you have to go through the world with your house on your back."

"I know," yawned the frog; "but let him

hear the tale, Mr. Snail. Perhaps the killdeer will help protect your kind for the favor."

The snail pushed another inch of himself out of the shell and began:

"I tell you only what has been told to me, and what is told to every snail old enough to remember. One time, long ages ago, there were so many worms in the world that they almost stripped all the foliage from the trees and bushes, and the birds had a hard time of it finding places to build their nests where they would be secure from enemies. The birds complained to Dame Nature, and she at once willed it that every worm that fed on foliage should work. 'If you work,' the worms were told, 'you will have less time to eat.'

"She taught the worms to spin, and promised that those who learned the art would receive a great boon.

"Well, many set to work and toiled hard. Others, thinking themselves wiser than those who toiled, hid in dark places, thinking that they would escape the task. They did escape for a while, but you will find, when I have finished my tale, that they were foolish.

"Well, in time, thousands of worms disappeared. Those who hid out said to one another, 'See? They work and that is the end of them.'

"Where do they go?' some asked, but none could answer.

"A committee of worms was appointed to discover, if possible, what became of those who worked and were seen no more. 'Pooh, pooh!' they said. 'Great boon, indeed, to work one's self to death for Dame Nature!'

THE committee, in snooping about, found on tree limbs and stalks of weeds a lot of empty beds that were made of webs woven by the missing worms. 'They built these little houses,' it was said, 'and then some birds eat them. Awful! We shall not work. If Dame Nature calls it a boon to be eaten, then we do not want any of her boons.'

"Just then a little flock of butterflies flitted past, and as they did so they cried to the worms, 'Get to work, folks! Say, it's fun to have wings and fly. This beats crawling, and we do not have to fear birds any more.'

"The committee did not find out that the butterflies gained their beauty and power to fly through the labor of worms, and Dame Nature did not see fit to tell anybody. The lazy worms continued to



"And that's all I have to tell, and you will excuse the tear that just fell from my eye, I am sure"

hide out, thinking they would not be discovered; but when the good dame wished to call them to account she had no trouble in finding them.

"Will you work?" Dame Nature asked of the lazy worms many times, and as many times they told her nay.

"If you will not spin your own beds, I will make beds for you!" the dame said, and straightway she caused a heavy rain to fall. This rain knocked every worm to the ground, where they squirmed in the mud. As they squirmed they gathered mud about their bodies, and then the sun came out, drying the mud rapidly. The more the worms tried to free themselves, the harder the mud became, until at length every worm found itself rolled up in a ball, and all the balls were then rolled into a lake, by the winds, where the water softened a little spot on each. Through the soft places the worms were able to stick out their heads, but when they found they could not get clear out they scolded and declared they would never work.

"Work, as the others have worked," Dame Nature told the rebels, 'or you will work in another way all your lives!' But still they refused.

"The good dame was disappointed. She was obliged to make good her threat, however, so she spoke as follows:

"As you do not see fit to have the great free and open for your homes, with pretty wings to carry you hither and thither, you will be given homes in which you will have to remain."

"That is what we want!" declared the lazy worms. "Take this old mud off us, give us the homes [CONTINUED ON PAGE 38]"

A committee of worms was appointed to discover, if possible, what became of those who worked and were seen no more



He Bred Champion Corn as He Might Livestock

I ALWAYS figured that building up a strain of corn is somewhat the same as developing and improving a strain of livestock," says Walter J. Ulrey, Fountain County, Indiana, winner of the first prize for the best twenty ears of yellow corn at the 1919 International. "I know that in livestock we need new blood from time to time, so why shouldn't it apply to corn as well?"

Working on this theory, Ulrey has gained a wide reputation as a breeder of good corn, and has become a member of the Indiana Hundred Bushel Club through a high yield of 103.3 bushels per acre. He is a renter, but it hasn't dulled his enthusiasm nor handicapped his ambition to raise the best corn ever grown.

Corn is his hobby. "As far back as I can remember," Ulrey confesses, "I have been a corn enthusiast. As soon as I was big enough to handle a little bit of ground I began to grow corn. From the first, and ever since, I carefully picked the best ears to be the seed of better corn the next year."

"I started with the best seed I could get, as the breeder of good stock begins with purebreds. Each year I purchased a little of the finest corn obtainable to put new blood in my strain. At first I planted the purchased seed on the south and west sides of my fields, so that the prevailing winds would blow the pollen over my own stock and improve it. This has worked out so well that lately I have been planting the 'new blood' on the north and east sides, for I believe my own strain is better than the corn I can buy. But I still plant ten of the most desirable ears I can obtain each year."

"I don't believe that growing big yields

of corn is a matter of luck. Most of the farmers in my county claim their corn yield was unusually low last year, running 35 to 40 bushels to the acre, and blamed it on the prolonged drought our section suffered during the growing season.

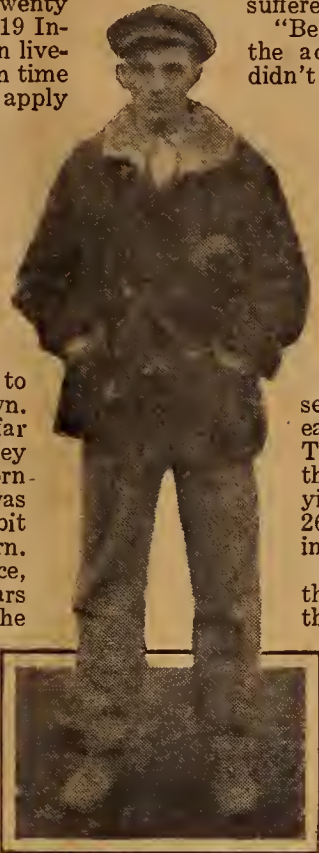
"Because I averaged 67 bushels to the acre, I have been asked if I didn't benefit from local showers the rest of the district didn't get, but I don't believe I had any more rain than the rest of them. What I did do, though, was to be mighty particular to take care of what did fall."

"We plowed in March, six to seven inches deep, though the extra labor of such deep plowing does not seem to pay in this soil. With disk and harrow I worked up a good seed bed, intending to plant early, but discovered cutworms. The result was that the field that made the 103.3 bushel yield wasn't put in until May 26th and 27th. I planted an inch to an inch and a half deep."

"I gave it four cultivations, the first two not more than three inches deep, and the latter three inches deep, and the latter only an inch to an inch and a half deep, as I don't believe in disturbing those little roots that creep close to the top. I practice level cultivation, using a six-shovel cultivator with wing shovels, and when the field was laid by on the fourth of July it was as level as possible. Taking these pains undoubtedly paid, or my yield would not have topped

that of my neighbors by the margin it did."

"I figure good seed to be cheap at almost any price. I was offered \$100 for my champion twenty ears, but turned it down, and would have refused more if it had been offered. I intend to plant them this spring in my seed plot."



Walter J. Ulrey of Indiana, winner of the first prize for the twenty best ears of yellow corn at the last International

How the Farm Bureau Works in Scott County, Missouri

WHAT are you going to do to improve the agriculture of your community?" was the way A. I. Foard, county agent of Scott County, Missouri, put it up to the farmers gathered together out in the Hunter schoolhouse a few nights ago. It was two hours later that the question was answered by the farmers present as directly as he had asked it.

Here's what happened at the Hunter school: Forty farmers met with their agent to outline a constructive program of work to be undertaken at once. Instead of being advised, they were set to work to develop the program themselves.

"From what crops do you derive your income in this community?"

"Corn, wheat, and oats," came the answer. Corn was given first consideration, but the farmers felt that they had more serious problems, and after agreeing to try out a variety test on one farm they passed on to wheat.

By this time the farmers were beginning to shuffle out of their overshoes and enter whole-heartedly into the discussion. There seemed to be a general agreement that there was only one serious trouble with the wheat, and that was the failure to produce grain in proportion to the amount of straw. It couldn't be lack of fertility they thought, for their land was considered rich and the dirt was black and loose. They said that they do not get the grain they used to get. As a means of solving this problem two men agreed to use acid phosphate on portions of their wheat crop next fall, and report the results after the wheat is harvested and threshed.

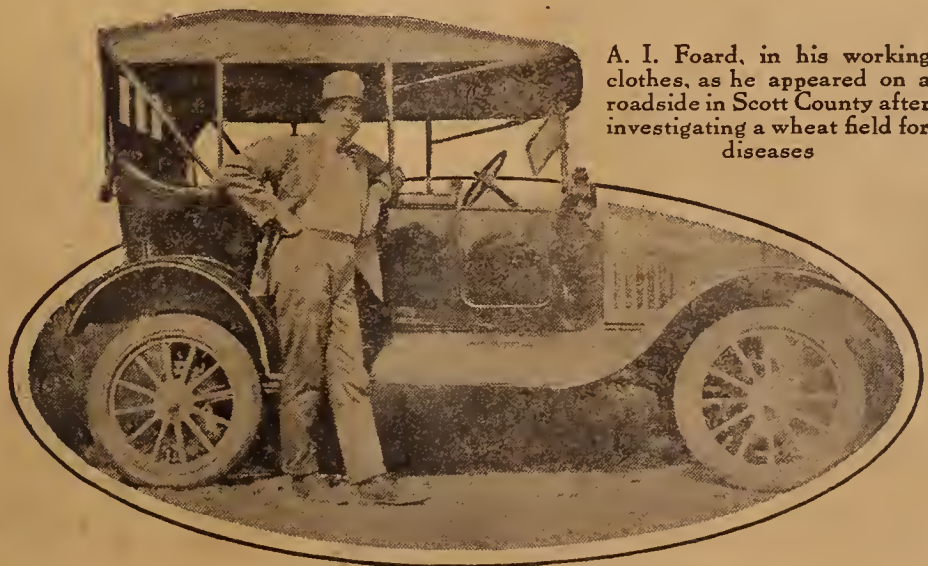
At this point Ray Johnson, the pioneer alfalfa grower in the Hunter community, explained that he was not satisfied with his alfalfa. It didn't seem to be thriving. The soil was well drained, good seed had been used and it had been inoculated.

"Maybe it needs lime," suggested Agent Foard. Nobody was sure about that. The agent reported that he had made many tests of the soil in that neighborhood, and that all samples showed a decided need of lime. The farmers seemed willing to accept Foard's statement but—

THE big idea back of this little story is that men who get together, find out what their problems are, then work out a community plan to overcome them, are pretty apt to succeed and prosper. THE EDITOR.

"Where are we going to get the lime?" one man asked. That question was not answered that night, but it will be. The agent got busy on that. As we drove home that night Foard said to me: "We have got to get that limestone, and we will get it, too, even if we have to put in our own crusher."

The average community hates to admit that it has trouble in keeping its boys and girls on the farm, but it is a common problem. The Hunter community farmers held this back for their [CONTINUED ON PAGE 41]



A. I. Foard, in his working clothes, as he appeared on a roadside in Scott County after investigating a wheat field for diseases

Ulrey has worked out a rather unique way of taking care of his seed corn. Using two ordinary screen doors for ends, he has built, inside his hog house, a framework in which he keeps his selected ears. The frame is entirely covered by screen, which allows plenty of ventilation but at the same time keeps out rodents.

"I buy Walter's bandanna handkerchiefs by the dozen," Mrs. Ulrey volunteered as we were discussing the different angles of successful corn-growing. Seeing my perplexity in trying to connect bandanna handkerchiefs with corn-growing, she explained:

"It's a matter of necessity and economy. When Walter sees a likely ear of corn on a

good stalk, he tears off a strip of his handkerchief—he prefers red ones—and ties it around the ear so it will not be overlooked when he selects his seed corn. If he has no handkerchief, off comes a strip of his coat, shirt, or overalls, so I make a point of keeping him well supplied with nice, bright red bandannas."

"A man can't succeed at farming by being on foot all the time," says Ulrey. "He must sit still part of the time—just sit and think." He has followed his own advice to the extent where he puts in many hours in study at home, and for the past eight years has never missed a Purdue University short course. WHEELER McMILLEN.

Why I Tiled, and How It Paid Me

STARTING on my farm at Pemberville, Ohio, three years ago, I saw that it needed humus and crop-growing material, and it needed draining.

I first thought these were needed in the order I give them. Now I am convinced that the last item should have come first. A very wet spring in 1918 kept me away from my work while men who had their farms underdrained got on their fields and put their crops in in fairly good time. I had to wait.

Ordinarily this wouldn't have meant much, but it happened that a drought came. The man who had his crops in was far ahead because he was started before the dry time came. No rain came for weeks, and some of my corn didn't sprout until July. Of course, it wasn't a good crop—some of it didn't even mature.

I decided that I had wasted enough time. I didn't have enough cash to do the tiling I wanted to do, so I asked the cashier of my bank about getting the difference. He said, "You can get all you want, Earl," so I went to it.

I got a ditching machine to do the work, and I put in about 9,000 tile—most of them were four-inch, and some five-inch. I decided never to have a man do any particular ditching for me after using this machine. A man can't do as good a job as a machine, and I know he can't do it so quickly. Besides, one can hardly find a man who will ditch these days.

This year I began to realize on my investment. I put about \$400 in the tiling, and know for sure that I have already got 50 per cent back. That is enough interest to suit me. This spring we had a month of rain in late March and April that was almost as bad as the year before. But this spring, when it stopped raining, I was able to get right after the plowing as soon as anybody else. The result is that my crops were in when they should have been. And, outside of being held up by about four weeks of pretty dry

weather which followed the rainy period, they are doing first-class.

Without the tiles I would have been in the same fix as last year.

If my corn had been planted a week or so later it would not have sprouted until the first rain which came the middle of June.

What I'm trying to point out is this: Don't wait to tile. The business man who borrows money from the same bank you do fixes up his place of business first. He usually doesn't wait. We farmers have seemingly been taught to earn as we go. It is a safe way, but it won't get us half so far as to prepare in the beginning for the work we are to do.

There is another reason for doing the work first: In my case, the tile would have cost me about half less had I installed it the first year. Yet I have made a good investment at present costs. But how much better it would have been had I invested the half and got the same returns! A conservative estimate of returns on any tiling is 10 per cent. Most of us who are paying for our farms on what we produce are paying five per cent, or possibly six per cent, for the money we are using. The difference is a clear profit for us, and I know that 10 per cent is far from the actual profit I made.

Before I started to tile I talked to about thirty different farmers. I didn't talk to young fellows starting out like myself; I asked the ones who had been through it. They said: "You'll never make a better investment." "I only wish I had tiled my farm the first thing."

"One will never get the most from his land investment until every spot will produce."

Many farmers don't tile because they dislike to harm some growing crop, but I went through a wheat field and a field of clover hay when I tiled. I wouldn't trade my tile for the strip of crop I destroyed for a good deal. The crop is lost one year while the tile are there for twenty years.

I don't believe less than a four-inch tile should be used on a main ditch. Possibly on short taps a three-inch might be well. To increase the diameter of a tile twice increases its capacity four times.

Don't get the idea that I have a bunch of money. I went in the hole for this farm, and am still paying for it. I can't afford luxuries, but I can't afford not to put in tile.

I put in my tile as deep as the outlet I had allowed. I used a fall of from 8 to 13 inches on a 60-rod ditch. There are no doubt types of soil where this will not apply, so deep tiling wouldn't be wise in every case. There are places where my tile is in the limit of the ditching machine, which is four feet, though the average is about 35 inches.

Old tilers advised me to use a tile outlet. I am glad that I took their advice. Now I don't have tile filled from muskrats working in them, or by the cows stepping on the ends and tramping them shut. Nor do I have tiles crumbling from freezing. My outlet is a 15-inch tile, which will carry all the water. EARL ROGERS.

How the "Whiteface" Came to America and Fought Its Way to Fame

By Daniel Lewis

YOU can always tell the Hereford from any other breed of beef cattle. It has a white face. So distinguishing is this badge of good breeding that the nickname for the breed is "the Whiteface."

The white extends to the underline, the feet, and the switch of the tail. Sometimes the white runs down the animal's back, and we have a "line-backed Hereford." The white makes an attractive trimming to the rich red robe of the short-legged, wide-backed, deep-ribbed, thick-fleshed bovine which is king of our great Western range, unquestionably the greatest of the grazers, and a prominent inhabitant of the pastures and feed lots all over the country.

If you would see the greatest show of Hereford cattle in the world you must journey to Kansas City in November, and attend the American Royal Livestock Exposition. Kansas City is the Hereford capital of the United States.

The Hereford takes its name from its original home, Herefordshire, in southwestern England, next to Wales, where the princes and the premiers who tell the princes what to do come from. Herefordshire is hilly. Grass is plentiful. To be adapted to such a country cattle must be good grazers, and be able to pick up most of their living from the pastures. In Herefordshire the cattle are kept out in the open the year around. In the olden days triple-purpose bovines were favored—they had to do service in the yoke and draw the plows and carts, they had to furnish the family milk supply, and finally, when they went to the butcher, they had to dress out well and yield barons of beef to please the critical British palate.

THESE conditions resulted in the molding of several of the characteristics for which the Hereford is esteemed. Raised in the open air instead of bank barns, the Hereford became specially resistant to tuberculosis. Figures given out by the United States Bureau of Animal Industry show that of all the major breeds the Hereford is freest from the plague. This is a tremendous advantage to its advance in America.

In the open air, too, the Hereford developed a hardiness and rustling ability which no other breed can equal. On the range, in dead of winter, the Whiteface will paw down through the snowdrift and find a bite of forage to sustain its life, while other sorts give up and die. Thus, where conditions are hard the Hereford knows no peer.

Not always was the face of the Hereford white and all white. It is said that originally the cattle of Herefordshire were all red. In neighboring Wales was a white breed with red ears. Then there were importations of black and white cattle from Holland. You can easily understand how a mixture of these sorts would lead to cat-

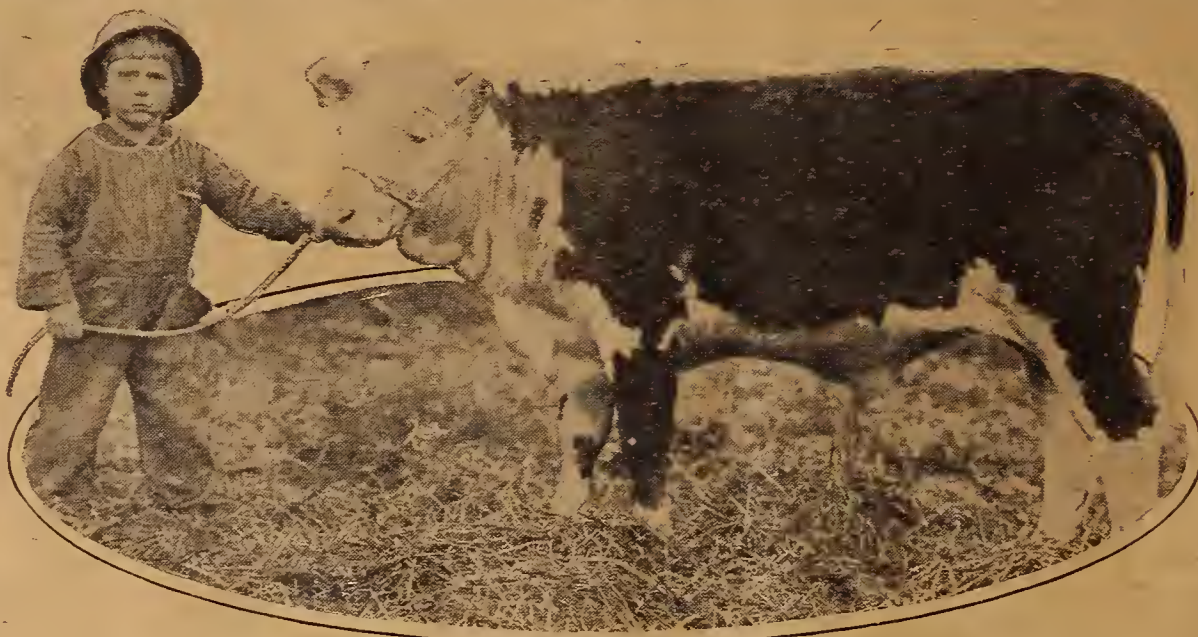


Perfection Fairfax, "King of Hereford Sires," owned by Warren T. McCray, Kentland, Indiana

tle "mottle-faced, light gray, dark gray, and red with white face," as T. C. Eyton described them when he published the first volume of the "Hereford Herdbook" in 1845.

Later the brocked-faced (mottled or spotted) and the white-faced cattle were

brought to Illinois in 1883. This bull was the sire of Hesiod and the ancestor of March On, both famous sires in American Hereford history. Thus you may see how a little knowledge of cattle history bridges the broad Atlantic and ties together the old and the new.



Joe Gross, Jr., with Tony Farmer. Joe is the youngest member of the firm of George Gross and Sons of Walnut, Iowa

most esteemed by the farmers in Herefordshire, and they selected them accordingly.

Then, the story goes, the bull Chance broke out of his stall and got into the pasture with his own daughter, Duchess 2d. Such close breeding was regarded then as a great misfortune, but the bull calf, which resulted from the incestuous mating, proved to be a bovine wonder. He came literally by Chance, in more ways than one. He was named Sir David, and for scale, masculinity, and character excelled all that had gone before.

Sir David became the greatest sire of the breed. His face was clear white, and he stamped himself indelibly on the breed, greatly to its improvement.

Sir David begot Sir Benjamin, among others; Sir Benjamin begot Sir Thomas. One of Sir Thomas' heifers bred to Horace gave a bull named the Grove 3d, which C. M. Culbertson bought for \$6,000 in England, and

The records of the Hereford may be traced back to the time when the last of our thirteen colonies was founded. In 1723 Richard Tompkins died in Herefordshire. Among the property which old Dick left to his son, Benjamin Tompkins, was the cow Silver and her calf. Silver was one of the foundation cows of the breed. Benjamin Tompkins died in 1789, and left his cattle to his son, Benjamin the younger, who went on with the work until he died in 1815.

From the old Silver cow he got the Silver Bull numbered 41 in the herdbook, and famous because his calves matured earlier, killed out a higher dressing percentage, and had more refinement, character and flesh, and less length of leg than the ordinary run of cattle.

Benjamin Tompkins the elder had a friend named William Galliers, who died in 1779; Mr. Galliers traded cattle with old Benjamin, and used the

same blood. Likewise, Benjamin Tompkins the younger had an intimate friend named John Price, who had notions of his own about producing cattle of wide-spread chines, deep heart girths, unusual scale, and smooth hooks, no matter what their face color or size of udders.

Price's cow Toby Pigeon gave him 19 calves, and at his sale in 1841 his whole herd was made up of her descendants, she herself selling in the auction for \$70 at twenty-two years.

John Hewer, who was born in 1787 and died in 1873, was another of the pioneer improvers. He got rich by breeding bulls and hiring them out. He bred Chance, the sire of Sir David. Cattle of his breeding were used in the herd of Thomas Jefferies, greatly to the improvement of the breed. Jefferies died in 1843, but long before that time the Hereford had been introduced into America.

In 1817 Henry Clay, our greatest compromising statesman, brought a cow, a bull, and a heifer to his farm at Lexington, Kentucky. So far as is known, these were the first Herefords to come to America. The Massachusetts Society for Promoting Agriculture got over a bull and a cow in 1825.

But the real invasion of the Hereford began in 1832, when a young man from Herefordshire named William H. Sotham shipped for America. He became a buyer for Ebenezer Wilson, a New York beef

packer. Sotham remembered the cattle at home as better fleshed than those he was able to buy in this country. He became convinced that some of the white-faced cattle of his native Herefordshire should be brought over and tried out in America. He finally persuaded Erastus Corning of Albany, New York, to go into partnership with him, and to send him to England for 22 head. This was in 1840. The Shorthorn had already taken America for its own. The Hereford had to fight for every foot of it. But under the militant leadership of W. H. Sotham the Whiteface began to make progress.

THIRTY-FIVE years later a new leader, more vigorously militant than the first, was found in T. L. Miller of Beecher, Illinois. He it was who really pushed the Hereford forward into the front rank in the battle of the breeds. Meanwhile, one Thomas Clark,

an English butcher boy who had settled at Elyria, Ohio, had started a herd there, making it the Whiteface center in America. But when T. L. Miller began to write and talk and breed Herefords at Beecher, Illinois, Mr. Clark moved out there. The old building in which Miller and Clark compiled the first volume of the American herdbook still stands. It is a printshop now, owned by Thomas Clark, who lives nearby and is still much interested in Herefords—chiefly those bred by his son-in-law and grandsons. [CONTINUED ON PAGE 48]



Bonnie J. was hailed as champion at the 1919 International. E. E. Mack & Son, Thomasville, Georgia, are his owners



Richard Fairfax, the bull which brought the record price of \$50,000. He is owned by Ferguson Brothers of Canby, Minnesota



Photograph of giant busses operating between Globe, Arizona, and the mines

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One of the rears has gone over 10,000 miles and is still in use, while two others yielded 8,900 and 7,000 miles respectively.

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Goodyear Heavy Tourist Tubes for passenger cars, like these heavy truck tire tubes, are thick and strong and their valve-patch is firmly vulcanized in.

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Vegetables From Your Cellar All Winter

By R. F. Francis

IN THE July number of FARM AND FIRESIDE I told how I plant my late garden for winter use. Many of the things planted, of course, are saved by canning, but a great many of them can be saved merely by storing. Things which can be kept for several weeks, or even months, are: Beans, beets, carrots, cabbages, cauliflower, celery, onions, parsnips, sweet potatoes, pumpkins, squashes, tomatoes, and melons.

Before telling how I handle these different things, I think a few words as to how storing works may help the beginner. Practically all fruits and vegetables begin to decay the moment they reach maturity. With some this process is very rapid, and with others it takes longer. But just as surely as any fruit or vegetable stops growing it begins to decay.

Decay is caused and carried on by bacteria, and, just as in the case of disease bacteria, they become more or less active according to the conditions which surround them, such as temperature, moisture, etc. The sole aim, then, in storing vegetables, is to create conditions which will be as unfavorable as possible to the development of the decay bacteria.

Here we have another illustration of "what is one man's food is another man's poison." The conditions which check one kind of bacteria are precisely the conditions in which other kinds thrive. As a general rule, however, a cool temperature—35 degrees—and a fairly dry atmosphere will hold decay bacteria in check.

First, everything possible should be done to furnish storage quarters that are clean and sanitary. You should no more think of storing vegetables in a cellar where they had been stored for several years, without giving it a thorough cleaning out, than you would think of putting fresh milk into a bottle that had not been washed, and for precisely the same reasons. Some weeks before freezing weather I open up as much as possible that part of the cellar where we store our vegetables. I clean it out thoroughly, sweep down the walls, and give them a good whitewashing. This is usually only a few hours' work, and certainly it is time well spent.

MANY good storage cellars are spoiled by being left unventilated so that the moisture has no way to escape. I use a simple device, the suggestion of which I got from a government bulletin a number of years ago. I removed one of the lower panes of glass from one of the cellar windows, cut out a board to take the place of the glass, and cut a round hole in the board which will let a five-inch stovepipe through. Just inside of the window I put an elbow, and on this another length of pipe which extends down to within a few inches of the floor. Near the top is an ordinary damper, so that the size of the opening can be regulated. Above where this pipe comes in is another short piece of pipe to let the moisture and warm air out. This arrangement gives a continuous circulation of air which need be shut off only in quite severe weather, when there is danger of the temperature in the storage-room going below thirty-four degrees. The cellar is kept perfectly dark.

The bins for apples, fruits, and all kinds of vegetables, except potatoes and other roots, are raised a few inches up off the floor so that there is a free circulation of air under them. The part of the cellar used for storage should be shut off from the main cellar, especially if the latter contains a furnace. This may easily be done by putting up 2x4's and covering them with rough boards and with sheathing paper on both sides of the scantlings, so that there is a dead-air space between.

Where there are more cabbage or root crops than can be accommodated in the cellar, they can be kept by digging a storage pit in a well-drained place, at the bottom of which is placed a layer of straw or leaves to keep the contents dry. This pit should be filled just before the approach of freezing weather, and at first covered only with straw or hay. As the temperature goes down, cover with a layer of soil, after this another layer of hay, and then another of soil.

A pit of this kind in a shady place will keep the contents in perfect condition through the winter. Ventilation should be supplied by inserting a piece of pipe or a wooden flue which can be stopped with a bag at the upper end in very cold weather.

As to the individual vegetables, the following is my method of handling:

Beans: We pull these up by the roots, or remove the poles after the vines have become dry, and store them in an airy, open shed. Later on in the fall, when the pods have become dry and brittle, the beans are threshed out and put away for future use.

Beets, carrots, parsnips, turnips, and rutabagas are all taken up just before the ground is likely to freeze. We take the tops off, but not too close, so the roots will not bleed. These are stored in the different bins in the cellar. We used to cover them with sand, but of late years we have used, instead of the sand, fresh, clean, spagnum moss. This seems to hold the right degree of moisture, and is much easier to handle than sand or soil.

We store most of the cabbage crop in an outside trench for spring sales, but what is wanted for our own winter use is kept in the cellar by fastening three or four heads together and hanging them from spikes driven in the joists. The stems and roots are left on, but the outer leaves are cut off.

Cauliflower cannot be kept through the winter, but if some of the least mature heads are taken up and heeled-in in a cold-frame they may be kept a good many weeks. If cold-frames are not available, they may be kept in a cool shed with a dirt floor, or even in a cellar.

The celery we handle in three lots. That wanted for earliest use is backed up with earth where it grows, and later covered with leaves or hay as freezing weather approaches. This branches out as it grows, and is used directly from the garden. The second lot we put in a trench in a well-drained part of the garden. This trench should be deep enough to cover plants up to the tops of the leaves with such soil as adheres to them left on. We take great care to see that the celery is dry when it is stored in this trench. This trench is covered over with bog hay as severe winter comes on. This celery often lasts us up to Christmas.

The rest of the crop we store in the cellar. We have several long boxes, about eighteen inches deep and a little over a foot wide, in which we place a couple of inches of sand and pack the plants in tightly, with the roots and soil left on. Each box has strong rope handles so that we can pack the celery in the garden and then carry it down cellar.

Onions may be stored in the same place as potatoes, but should be put in open slatted crates to give free air circulation. They should be taken up as soon as the tops die down, and dried out thoroughly on a shed floor or in an open loft. As soon as the tops are dry enough to rustle they are cut off about an inch above the bulbs. We leave the bulbs there until there is danger of their freezing, when they are put in onion crates, which can usually be obtained from any grocery store, and stored away in the cellar.

Sweet potatoes, pumpkins, and squashes, unlike most other vegetables, should be kept where the temperature is high and very dry. A good place to put them is in

the attic near the kitchen chimney, or near the furnace in the cellar. These should be gathered before the danger of the first real frost, as a slight nip will cause them to decay very quickly. Pumpkins and squashes should be handled with the greatest care, as any bruises, even though they may not show at the time, will cause decay spots later on.

Though most folks do not seem to realize it, tomatoes may be kept for several weeks. The day before we expect the first real killing frost we gather all the ripe and nearly ripe fruit from all except a few of the best plants, and store them in cold-frames, where they are covered with clean white straw. They are left here, being covered with sash when there is danger of freezing, and gradually ripen up for several weeks. A few of the very best plants I take up, roots and all, and hang them up, upside down, in the cellar, after removing part of the tops and the small green fruit. The fruits left on the vine will continue to ripen for several weeks.

Bulbs for the Early Spring Garden

IHAVE found that no class of flowers are so charming, and none more satisfactory, than those produced from fall-set bulbs. The earlier varieties often bloom while the rest of nature is still dormant, and even with snow on the ground.

Now is the time to prepare for these early spring messengers. In the Northern and Central States bulbs are usually planted six weeks before regular freezing

weather is expected. However, here in Illinois I have found that they will do very well planted as late as the middle of February. But the late-set bulbs bloom much later, and their flowers are inferior, so it is not advisable to plant so late except when shipments are delayed. Perfect root development is the greatest essential for success with bulbs. When planted late the roots do not have time to develop before spring, consequently have not strength enough to produce large flowers.

I find that the bed or border in which bulbs are to be planted should be prepared by deep spading, raising the ground a little so that water will not stand on them. I have discovered that good surface drainage are essentials for successful bulb-growing. If the ground is not naturally rich and porous, I work in a liberal dressing of well-rotted manure and bonedust. I never use fresh manure, and I make sure none come in contact with the bulbs. A handful of sand placed around each bulb is very beneficial. I always try to plant all bulbs of the same variety the same depth, otherwise they will not bloom at the same time. Most bulbs may be set so that the tops will be three or four inches beneath the surface of the soil, and four or eight inches apart. Daffodils, tulips, narcissus and jonquils should be planted five or six inches apart, and about four inches deep. Crocuses, scillas, anemones, snowdrops, chionodoxas, and other small bulbs should be set two and a half to three inches apart, and about two and a half inches deep.

After the ground has frozen, and on the approach of severe freezing weather, cover the bed with leaves, straw, or other dry material to a depth of several inches. This prevents the bulbs from starting to grow during a warm spell, and also prevents injury from spring freezing or thawing. A few evergreen boughs or brush thrown across the top will prevent the mulch from blowing away. This covering should be removed as soon as severe freezing is over.

I never allow the bulb flowers to go to seed, as this robs the bulb of vitality and makes it deteriorate. It is best to cut the flower stems either when it blooms, or immediately afterward, with a sharp knife. With a little care you can have the cheerful welcome of spring expressed in flowering bulbs, and most of them will bloom satisfactorily for several years without re-bulbing.

MRS. LENA C. AHLERS.

NOTE: Some of the most charming lawns we have ever seen had flowering bulbs scattered all through the lawn, as though they had grown there naturally. Mowing does not harm them if the grass is not cut too closely. Snowdrops, crocuses, daffodils, and others may be treated this way, and they will bloom year after year. By throwing a handful of them out broadcast, planting wherever they fall, a natural effect can be obtained.

THE EDITOR.

Bulletins You Might Find Helpful

YOU can obtain these useful bulletins free, as long as they last, by checking the ones you want and mailing this list to the U. S. Department of Agriculture, Washington, D. C.

Monthly List of Publications. This circular is issued monthly, and describes the publications of the Department of Agriculture. It will be sent regularly to all who apply for it.

Selecting a Farm, Farmers' Bulletin 108. It will pay anyone thinking of buying a farm to study this bulletin.

The Installation of Dust-Collecting Fans on Threshing Machines for the Prevention of Explosions and Fires and for Grain Cleaning, Circular 98. Millions of dollars are lost annually through dust explosions while threshing. This bulletin tells how to prevent losses of this kind.

Coöperative Marketing of Woodland Products, Farmers' Bulletin 1100. Methods of coöperative marketing of forest products are described.

Rabies or Hydrophobia, Farmers' Bulletin 449. Describes this terrible disease and its method of treatment and prevention.

The Stable Fly, Farmers' Bulletin 1097. How to prevent its annoyance and its losses to live stock.

The Hessian Fly, Farmers' Bulletin 1083. Tells how to control this insect whose damage runs into millions every year.

THE EDITOR.

Prize Contest Announcement

How We Made Our Coöperative Association a Success

WE KNOW that you are interested in the great coöperative movement that is sweeping the country, and which promises to bring about a square deal for producer and consumer alike. FARM AND FIRESIDE is desirous of doing all that it can to assist farmers' coöperative associations that are already in operation, and also to help in the formation of others.

We will pay \$15 for the best letter telling how you made your coöperative association a success. For the next best letters we will pay \$10, \$5, \$4, \$3, and \$2 each for all others that are accepted.

Our only requirements are that this be a real farmers' coöperative movement, and that it has been in operation for a year or over. Give full details as to how you organized and the work that has been accomplished. Keep your letter to 700 words if possible. Photographs will add to the value of your letter.

The contest closes October 31st. Enclose a stamped envelope if you want your letter back. Address Contest Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City. THE EDITOR.

MANY of the Hupmobiles you see in useful service today, are types which have been out of manufacture from three to seven years, and even more.

Families which own these cars can tell many illuminating instances of how little they cost to run, how well they serve, and how faithfully they keep going.

Unquestionably, such records have done much to weld the belief that the Hupmobile is the best car of its class in the world, into a widespread, solid conviction.





City gas can't reach your Farm but city gas conveniences can

UNION Carbide brings to the farm every lighting comfort and cooking convenience enjoyed by people living in cities. You certainly owe it to yourself and to your family to take advantage of every opportunity to make your home more comfortable.

Think what a clean, cool kitchen means to the women folk in the hot summer months. Carbide gas will give her as modern a cooking fuel as her city sister uses. It saves time and labor—leaves her free for other household or social duties.

Think of having artificial sunlight flooding your barns and out buildings during the early morning and evenings. You can do it with Union Carbide.

Write for interesting booklet.

Why Carbide Gas Has Been Used for Lighting and Cooking for Twenty Years

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| 1 Carbide gas is made automatically—requires only carbide and water. | 11 Requires very little room. |
| 2 Nearest light to sunlight. | 12 Needs attention but a few times a year. |
| 3 No expert attention needed. | 13 Costs nothing to operate when not in use. |
| 4 A year's supply of Union Carbide hauled in one trip from town. | 14 Seldom needs repairs. |
| 5 Any house, new or old, easily equipped for gas lighting and cooking. | 15 Every room has its own bright light. |
| 6 Burns clean without soot or odor. | 16 No carrying of lights from room to room. |
| 7 Cooking flame the hottest known. | 17 Gives sun-like light in barn and other buildings for early morning and late evening chores. |
| 8 Increases property value more than its cost. | 18 Saves all the daily labor of refilling and cleaning lamps. |
| 9 Carbide gas the only artificial farm fuel for both lighting and cooking. | 19 Saves carrying wood into kitchen and ashes out. |
| 10 Plant easily installed. | 20 Keeps the kitchen cool in summer. |

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U-12

Five Points to Follow in Feeding Fall Pigs

By J. R. Wiley

SOME farmers say they never have any luck with fall pigs. I spell luck with just one letter—U. Fall pigs will pay just as big dividends as spring pigs—if you manage them right.

These words, snapped with the conviction of the man who knows, were spoken by my friend Jim Kraning of Miami County, Indiana. He's one of the real hog men in his community.

"What does managing fall pigs right involve?" I asked.

"Pigs farrowed in late August or early September for this climate; an abundance of good feed, self-fed from the time they are born until they go to market; plenty of water that is not ice cold; dry, warm quarters, and healthy pigs free of parasites," Jim answered in that definite manner possible only to the man who has studied his business carefully and thoroughly, and knows the fundamentals that bring success.

Jim's sows are always bred during May, which means late August or early September pigs. If the spring pigs are not old enough to wean at that time, he takes them away from the sows at night for five or six days and feeds the sows heavily. With this management they generally come into heat. The few sows that do not are fattened and sold.

"October or November pigs haven't much chance to get a good start before cold weather in this locality, and it's the get-away that counts," was Jim's way of putting it. "Late August or early September pigs will make a clean get-away if they are fed right."

Corn, wheat middlings, and tankage are Jim's growing and fattening ration. He fixes a self-feeder containing these feeds in a creep when the fall pigs are only four or five weeks old. From that day until they go to market they always have all they can eat.

"The shorter the feeding period the bigger the profit" is Jim's hog-feeding axiom. "Last fall my 58 pigs averaged 55 pounds on December 1st. They were self-fed corn, wheat middlings, and tankage, and made an average daily gain of 1.35 pounds, going to market March 27th at an average weight of 214 pounds. I got \$5 more than the feed cost for each fall pig I sold last winter, in spite of the low prices for hogs and high feed prices. I wouldn't have made anything on them if they had gained only a pound or so a day apiece. It was the rapid, economical gains that gave me a profit on the deal."

AN ABUNDANCE of lukewarm water is supplied by a 60-gallon galvanized-iron fountain, equipped with a kerosene-oil burner. This fountain, working day and night, supplies water that the pigs can drink comfortably even during the coldest weather.

"Water is by far the cheapest part of the hog's ration, even when it has to be warmed up," is Jim's reasoning. "It's mighty important that self-fed hogs have an abundance of warm water in winter in order to digest and assimilate dry feed properly."

Dry quarters are painstakingly provided so that the hogs may loaf and sleep in comfort after feeding. Jim uses a rough old shed, but keeps it dry by using plenty of bedding.

"It's the comfortable porker that makes the most money," confided Jim. "A hog in good flesh can stand considerable cold if it's dry. But a combination of cold and dampness will make a shivery, rheumatic hog and also entries on the debit side of the ledger."

Jim throws other health safeguards around his fall pigs. About the first of December he gives each shot an individual dose of about three grains of santonin and five grains of calomel to a 50- to 75-pound pig to rid them of worms. A wholesale druggist supplies capsule doses of this size in large numbers for much less than the local druggists ask. The pigs are dieted, getting only water, fifteen to eighteen hours before dosing, and for six hours afterward. A combination of half wood ashes and half charcoal in a self-feeder is used after this as a preventive. Lice are controlled by the use of crude oil applied with a hand sprinkler.

"I used to neglect this," said Jim, "before I knew how much it costs to feed lice. Since Uncle Sam's investigators have informed me that it costs \$1 to \$2.54 more a hundred pounds of gain to feed lousy hogs, I watch for lice carefully. I can't afford to feed them."

JIM'S story may read like expensive feeding equipment, but his whole plant didn't cost him over \$200, perhaps not that much. It consists of an outdoor concrete feeding floor about 12x20 feet, which Jim is careful to clean every week or so. Along two sides of it are rail cribs. Jim simply tears out the side next to the feeding floor and lets the corn roll down self-feeder fashion as needed. In one corner of the floor is the self-feeder that contains the wheat middlings and tankage. In another is the water fountain with its kerosene burner. In still another is a self-feeder containing the wood ashes and charcoal mixture. Close by is the crude but efficient shelter where the pigs loaf and sleep. It's not expensive equipment that explains Jim's success with hogs; it's his good management. His methods are within the reach of any farmer who will learn how to "spell luck with the letter—U."

America's First Mule

IT WAS not the State of Missouri whose breezes first reverberated in America that long, weird sound familiarly known as the bray of a mule. Rather those peculiar notes first broke the peaceful echoes around Mount Vernon, and the beast claimed General Washington as his master.

This long-eared beast was named Royal Gift, and was sent to Washington by the king of Spain. The mule measured 15 hands high, his ears were 14 inches long, and his vocal cords were good. His disposition was sluggish, and he was rather ungrateful, so much so that General Washington remarked upon the beast's inability to appreciate "Republican enjoyment."

However much he may have lacked in appreciation, he was given much publicity. General Washington sent him on a tour of the South, where his strange appearance created much excitement. The attention lavished upon Royal Gift caused the keeper to hurry him from place to place at such a pace that the animal, used only to a dignified walk, was reduced to such a condition that Washington was quite shocked at the change.

It is said that Washington looked forward to producing a type of mules suitable to draw the family carriage. History does not record whether the first President of the land was ever drawn thus. The jubilant sounds of these creatures in no way disturbed the Father of His Country, but he was at all times very enthusiastic over them, and commented upon them in glowing terms as a very excellent race of animals.

The Kansas Industrialist.



Handling fall pigs the Kraning way will make porkers like these

Ro-San Rolling Bath Tub With Heater

Full size white enamel tub, nickel-plated 12-gal. tank. Closes up in space 3 ft. square. On casters—roll it anywhere. Heater attachment for kerosene, gasoline or gas. Water heats quickly, waste drains through hose attached to temporary or permanent outlet. Simple. Guaranteed. Write for catalog and price.

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"Cornell 32"*

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"Mill-Primed"—Needs No Sizing

Cornell's three valuable improvements—the "Mill Primed" Surface, "Oatmeal" Finish and "Triple-Sizing"—have created a demand for Cornell Wood Board which far exceeds the supply. Now another large mill is nearing completion, and this addition will double our capacity, already amounting to millions of feet a month. It seems that builders everywhere want the Cornell features—farmers most of all.

For Cornell takes a perfect spread of paint or calcimine without a sizing coat, because it is primed at the mill. This "Mill-Primed" surface saves the farmer much work and expense.

Cornell's handsome "Oatmeal" finish is so attractive that many builders leave the board unpainted for a time.

Our "Triple-Sizing" process gives Cornell triple protection against mois-

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There's nothing cleaner,
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ture, expansion and contraction. Do you wonder that lumbermen cannot keep enough Cornell on hand? Place your order in advance to insure delivery when wanted.

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Do You Want It?

[CONTINUED FROM PAGE 5]



Examining the tire layers after 15,000 miles.

Tire Mileage Doubled

Costs us \$150 for each added mile

Miller Tire experts, in the past five years, have doubled their average tire mileage. They have cut the cost-per-mile in two. That will save Miller users this year some \$50,000,000.

The cost of these betterments on the Cord type alone, has been \$1,136,419. Just the laboratory and testing expense last year averaged \$10,000 monthly. These thousands of added miles have cost us about \$150 each.

New-Grade Tires

The result is a new-grade tire. To hundreds of thousands it has brought a new conception of good tires.

Now Miller Tires are everywhere discussed. They are used exclusively in some of the hardest services. The demand in five years has multiplied 20-fold.

Tread Patented

Center tread smooth with suction cups, to firmly grasp wet asphalt. Geared-to-the-Road side treads mesh like cogs in dirt.



From California

Gilman Bros., of San Jose, sold 1,200 Miller Cords in nine and a half months, have only made one adjustment. One of these tires went 53,000 miles on a heavy stage. Another 49,987. And a third 38,000 and still running.

From Colorado

The La Junta Motors Corporation, La Junta, report that Millers average 15,000. They have not had one adjustment in two years.

From Florida

W. R. Link, tire dealer, of Orlando, reports four tires going over 28,000 miles on a car owned by the Hutchins Realty Company.

Costly Methods

We keep 250 tires constantly running under observation. We destroy 1,000 tires yearly to learn how to improve them.

We separate tires after long, hard use to watch the effects on layers.

We spend \$1,000 daily just to watch and test tires and materials. We sign every tire, so each returned tire teaches us its lessons.

Now Millers offer mileage which a few years ago was undreamed of. And they offer treads which, by countless tests, outlast the best of others by 25%.

You owe yourself a test. Learn what this doubled mileage means on your car. Compare the Miller Tire with others. Let the figures tell you which tire to adopt.

A maker who has made good tires twice better deserves a trial from you.

Miller Tires

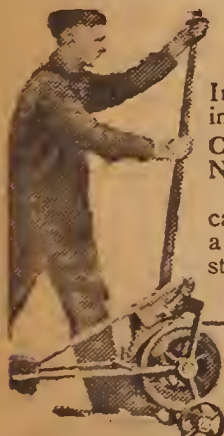
CORDS Geared-to-the-Road FABRICS

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THE MILLER RUBBER COMPANY, Akron, O.

Also makers of Miller Inner Tubes, built layer-on-layer.
Based on 24 years of fine-rubber-experience. Red or Gray.



Turn stump land into Money

Increase your acreage and thereby increase your income.

Clear your stump land cheaply. No expense for teams or powder.

One man with a can outpull 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of the finest steel—guaranteed against breakage. Endorsed by U. S. Government experts.

HAND POWER
K Stump Puller

Write today for special offer and free booklet on Land Clearing

Works equally well on hillsides and marshes where horses cannot operate
The Fitzpatrick Products Corp.
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cotton called Egyptian, but to-day there is no Egyptian who would recognize it. By careful breeding and selection you have to-day a long-staple cotton, one of the best cottons in the world, and one which adds to the length of life of every garment made from it.

What are the results in dollars and cents? Twenty million dollars' worth of cotton last year, because of a Department activity, from a source that would not have existed except for that activity. Twenty million dollars a year right along from one line, and we are spending for the development of our entire agriculture only ten or twelve million a year!

Take durum wheat: The same situation existed. In the great Northwest there were thousands of acres of semi-arid land which would not grow crops. The Department went out and found a hardy drought-enduring wheat, bred it up, developed it. What does it mean to the United States to have produced each year from twenty to forty-five million bushels of wheat on ground where there would not have been any wheat? It cost the Department perhaps a quarter of a million dollars to develop this crop that, year after year, provides fifty million dollars or more.

Take the grain and forage sorghums: The Southwest could not grow Indian corn satisfactorily, so these men in the Department searched the world for other crops that could be grown there. Last year there were 125,000,000 bushels of kafir corn and other grain sorghums produced where before there was none, and a few thousand dollars in the hands of earnest and capable men was responsible for much of this.

OUT in California the Department found cull oranges and cull lemons selling at \$5 a ton. It established a citrus-fruit laboratory to discover uses for the culls. As a result, the by-products of lemons last year were 1,500,000 pounds of citric acid, 500,000 pounds of citrate of lime, and 50,000 pounds of lemon oil. Twenty concerns are now engaged in the manufacture of products from cull oranges. The total products last year were six million pounds of marmalades, jellies, and so forth. Isn't that cutting waste?

In northern California there were thousands of acres of land growing nothing. The land was worth \$5 to \$10 per acre. For less than \$200,000 the Department introduced and developed a rice by foreign exploration, research, and careful breeding, and to-day a rice crop valued at \$21,000,000 is produced in that territory.

You might not have a navel orange to-day if it were not for the Department of Agriculture. The oldest tree—among the descendants of the Washington navel orange which the Department introduced from Brazil—is still growing in the greenhouse on the grounds in Washington. Last year 13,000,000 boxes of California-grown navel oranges were distributed among the people of this country.

Another thing the Department has introduced is the Smyrna fig, but at first the trees would not bear fruit. By careful observation it was found that certain small wasps were the fertilizing agents. The wasps were brought over, and still the fig trees would not produce. By careful observation and study it was discovered that, beside the Smyrna fig, the wasp required the Capri fig to breed in. The Capri fig was brought. With the wasp and the Capri fig and the Smyrna fig together it is all settled, and soon America will be producing her own high-quality figs.

There is an interesting story about dates: There is a date industry in America, and it is producing a better date than you can find in any other place in the world.

Some of the best dates have but few offshoots a year through which the trees can be multiplied. The inferior dates have twenty or thirty offshoots a year. To prevent the planting of inferior trees, the Department sends to Egypt for offshoots of the choice varieties. Four thousand dollars spent now means tens of thousands saved in the future.

Take the cotton-boll weevil: You know the fight there has been on this pest. We have been spending money—and you men have paid some of it in taxes—to fight the insect. It has been discouraging work, but the experts of the Department did not give up, and now the tide has turned. They poison the weevil's drinking water. His drink is the dew on the cotton leaves in early morning; so they poison the dew, and that is the end of the boll weevil.

Last year this method was tested out on an abandoned farm, where the farmer had said, "I give it up," and had moved. The Department divided

the field into three strips; the unpoisoned strip on one side produced 48 pounds of cotton, the other strip on the other side produced 60 pounds of cotton; the strip down the middle, where the drinking water was poisoned, produced 480 pounds of cotton. What does this mean to America? What does it mean to you that this Department should be equipped to do these things?

In 1903 three doctors, scientists in the Department of Agriculture, Drs. Dorset, McBride, and Niles of the Bureau of Animal Industry, discovered the cause of hog cholera. They also worked out an effective method of preventing the disease. Since 1913 the losses from it have been reduced over 60 per cent. The death rate per thousand, which was as high as 144 in 1897 and 118 in 1914, has been reduced to 41 in 1919. What does it mean to reduce the losses from hog cholera from 144 to 41 per thousand? Just a little matter of forty-one million dollars. What does it mean to you? What does it mean to your homes out there in the country? What does it mean to the boys and girls who are enabled to go into school and become better citizens? What does it mean so far as life in America is concerned?

The discovery that the mosquito was responsible for yellow fever was based upon the work previously done by scientists of the Bureau of Animal Industry, which proved that Texas fever could be carried only by the cattle tick. If it were not for that discovery you might not have the Panama Canal to-day, because you first had to get rid of yellow fever.

I say those men made a valuable contribution to the nation, and that it is not only poor advertising when we talk about them being loafers or inefficient, but also ungrateful and unappreciative.

IN dollars and cents, the Bureau of Animal Industry estimates that, in the year May 1, 1918, to May 1, 1919, hog cholera destroyed 2,800,000 hogs in the United States. It destroyed two million eight hundred thousand hogs, and their value, as of January 1, 1919, would have equaled \$62,000,000. Sixty-two million dollars lost. To reduce that 10 per cent, or \$6,200,000, would pay two thirds of the ten or twelve million dollar appropriation for agriculture. That is just hog cholera. You must remember the wheat, the cattle tick, the cotton, and we can go on and justify the ten or twelve millions many times.

I want to refer to the wheat rust, which affects every business and every family in America. Millions and millions of dollars are lost because of the black rust in wheat, which means thousands and tens of thousands to New York. The common bar-

[CONTINUED ON PAGE 28]



No More Shivering

*Every Room Cozy Warm
When You Install the*

MUELLER

The "Big 3"

PIPELESS FURNACE

YOUR whole house flooded with warm, moist, healthful air. No more ice-cold rooms and shivery corners. No more fuel-wasting, dirt-scattering stoves. Real heating comfort *guaranteed*. Your fuel bills cut $\frac{1}{3}$ to $\frac{1}{2}$ —better living conditions.

All this a certainty when you install the Mueller. A certainty because three big, vital and exclusive construction features, the "Big 3," insure its efficiency.

Read About the "BIG 3"

These three construction features are not mere "improvements." They are the fundamental principles of correct pipeless heating—a result of scientific tests and 63 years' experience and leadership in building heating systems of all types. Study the "Big 3" features carefully. They mean much to you in your selection of better heating equipment.

Feature 1. Large and Properly Proportioned Register Face

It insures the delivery of a big volume of warm, moist air which rises slowly through register but spreads rapidly to every room in the house.

Feature 2. Spacious, Unobstructed Air Passages

They permit unrestricted air travel in the furnace which results in withdrawal of large volume of cool air from rooms while delivering an equally large volume of warm air into them. Narrow, crooked, air passages and small register face restrict

cool air withdrawal into the furnace and delivery of warm air from it, which means a small volume of scorching hot air rising too rapidly and causing uneven distribution of heat.

Feature 3. Vast and Scientifically Designed Heating Surface

It insures full benefit from fuel burned and big fuel saving because every inch of heating area is effective. Improperly proportioned heating surface with small area requires hard firing to provide sufficient heat, which results in irregular heating, over-heated castings and big fuel waste.

Settle the Heating Question Now

Install your Mueller now and be assured of a warm home and a big fuel saving for all winters to come. The Mueller is made in eight sizes, a size for any home, church or store building. It can be quickly installed; no cellar too small, no pipes or heat in cellar. It will burn *any kind of fuel* with equal efficiency and big saving. Do not forget also that the Mueller is *guaranteed* to heat every room in your house comfortably and that back of this guarantee is a 63 year old company which has established a nation-wide reputation for efficiency in building heating systems of all types. Fill out and mail the coupon now—take the first step toward greater heating comfort and fuel saving.

Send for Free Mueller Booklet

Gives full description of the Mueller Pipeless, tells how it works and explains in detail the "Big 3" features. Gives you, also, valuable information about pipeless heating. Send for it today.

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Makers of Heating Systems of All Types Since 1857

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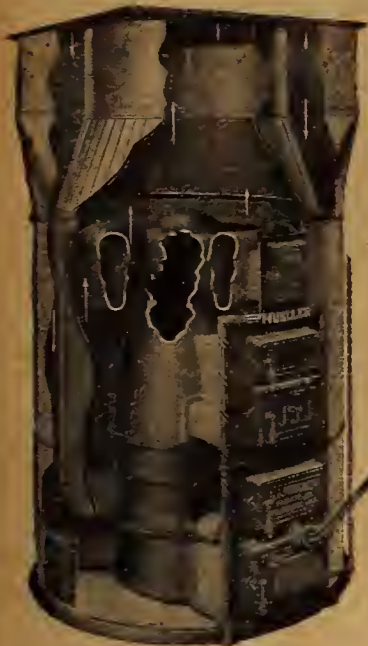
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Do You Know—



STANDARD PRACTICE
The use of Timken Tapered Roller Bearings at points of hard service in the great majority of motor-vehicles is proof of leadership established on the tapered principle of design, quality of manufacture, performance on the road, and service to the automotive industry.

that there are classes of work where a small truck can move more material in a day than a big one?

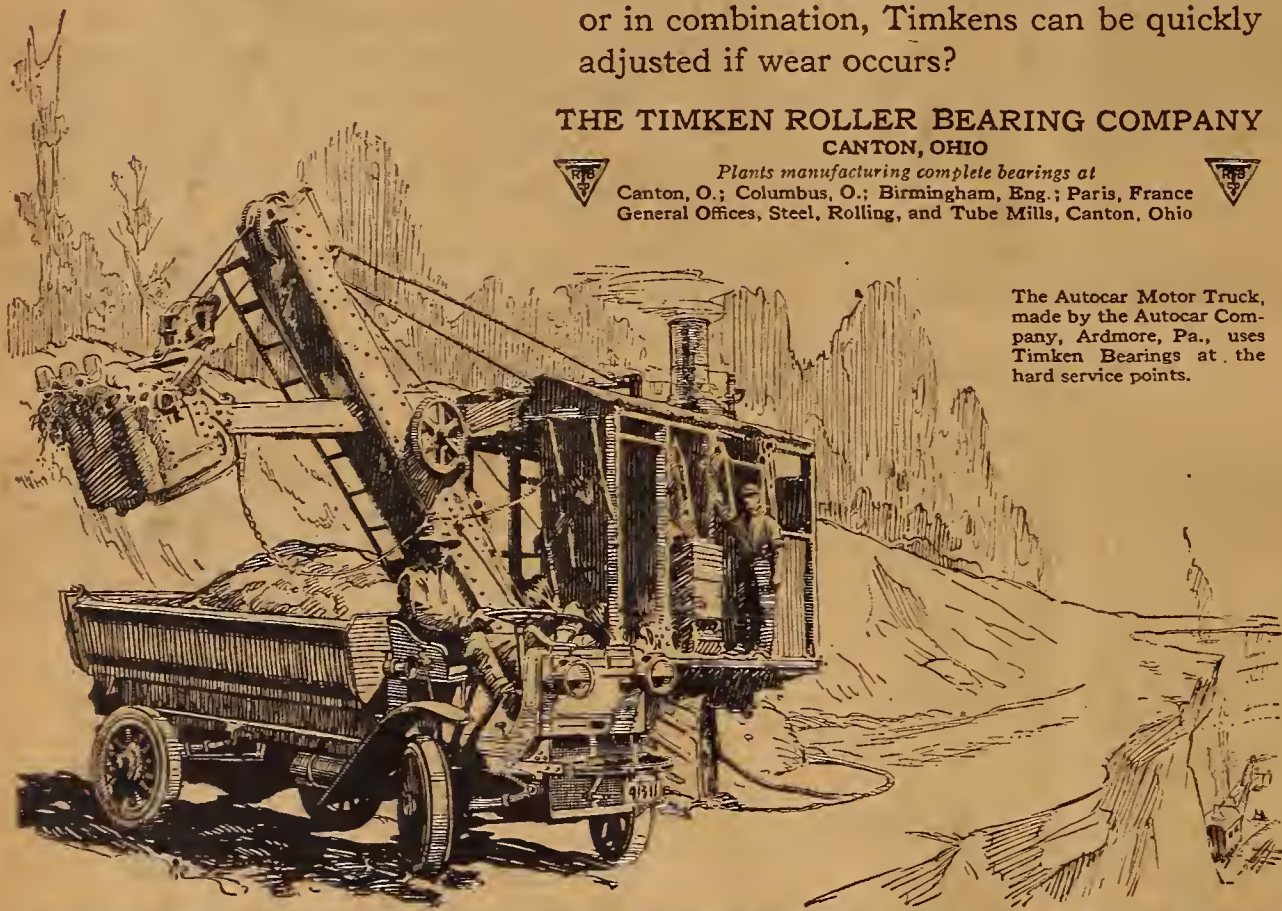
that manufacturers of *all* sizes of trucks are agreed that correct bearings are one of the big essentials in truck reliability?

that manufacturers of 87% of the trucks made in this country are further agreed that the Timken Tapered Roller Bearing is the correct bearing for the hard service points in their products?

that this preference is due to the fact that in addition to their particular ability to resist thrust and radial loads separately or in combination, Timkens can be quickly adjusted if wear occurs?

THE TIMKEN ROLLER BEARING COMPANY CANTON, OHIO

Plants manufacturing complete bearings at
Canton, O.; Columbus, O.; Birmingham, Eng.; Paris, France
General Offices, Steel, Rolling, and Tube Mills, Canton, Ohio



The Autocar Motor Truck, made by the Autocar Company, Ardmore, Pa., uses Timken Bearings at the hard service points.

TIMKEN TAPERED ROLLER BEARINGS

What is Fertility?

FERTILE land is the basis for all permanent agricultural prosperity, and the question of soil fertility has a direct bearing on practically every agricultural subject. It is useless to spend time and money for the purpose of improving plants and animals unless the soil is fertile enough to furnish a sufficient amount of food for the former and feed for the latter.

Soil fertility may be defined as capacity to produce growth of the crops to which the soil and climate of the region are adapted. It does not depend upon any one factor, but upon a number of factors working together. The chief of these factors are: sufficient plant-food elements in an available form, sufficient water to convey these elements to the roots of the plants, proper soil temperature, and sufficient air in the soil to furnish oxygen to the roots and to facilitate necessary chemical changes in the soil.

Water in soils, except in irrigated sections, depends upon rainfall, but may be conserved by correct amounts of organic matter and proper tillage methods. Therefore the chief duty of the farmer in maintaining soil fertility is to see that the soil is kept supplied with organic matter and the essential plant-food elements.

VIRGINIA BULLETIN 221

Do You Want It?

[CONTINUED FROM PAGE 26]

berry is the host plant of the fungus which causes wheat rust, and the Department is coöperating with the States in locating and destroying the barberry bushes, thus greatly reducing the spread or prevalence of the disease—a plant disease that has cost the United States a loss of 200,000,000 bushels of wheat in a single year. What does it mean to you? What can you afford to pay for it? I suppose it is costing you a penny a year each.

There are some who complain about the work of the Agricultural Department. They are the people who go up against the pure food regulations, for example—the people who want to put something in your food that does not belong there. They think they are all right, but your doctor does not agree with them. These men complain, and they go round talking about it, and it gets into the papers, while many who are helped in the production of pork and wheat and other things either do not know or forget that they are helped.

There is no politics in the Department of Agriculture. Out of 21,000 positions, only four are not under the Civil Service—the Secretary, the two Assistant Secretaries, and the Chief of the Weather Bureau.

NOW, I shall briefly refer to the matter of the county agents: A member of Congress says their cost is money thrown away: "The crime of the thing is that whenever you appropriate a dollar you must make the States put up another dollar. They are writing and protesting about it."

It is an odd thing that, when the county-agent movement was begun, the Government had to pay practically all the expense, then two dollars to one, then fifty-fifty, while to-day the States, counties, and farmers are putting up about nine million dollars to the Government's six in order to support the county agents; and yet the congressman to whom I have referred says it is ridiculous and a waste, and ought to be cut out, that these men wear patent-leather shoes and high collars, and do not get on the farms.

Men in Congress talk about economy in providing funds for the Department of Agriculture. They think they are carrying out your instructions and your wishes. I am not going to discuss appropriations, but I have memoranda here regarding some of the lines of work which are to be curtailed. I have not the time to go into them in detail. I shall simply say that vitally important activities are to be cut down if the action that has been taken on our appropriation bill prevails. Even now I am receiving inquiries for men to go out and help eradicate tuberculosis in cattle, but the answer invariably is:

"We cannot send a man to help you get rid of tuberculosis in your cattle because we haven't the money."

I have told you some of the things the Department has done. Are you going to keep this wonderful service? It is not wholly the problem of the Department of Agriculture, because we are only *your* agents. You must make your congressman see the light and give the Department the funds it needs to do things that will help your business.



Blasting stumps is easy—grubbing is drudgery

To remove a stump by grubbing and horse pulling is a back-breaking, killing job. Compare this kind of stumping with that described by Mrs. J. R. Cronister, of Jeanette, Penna., who writes:

"We read the book, 'Better Farming.' The pictures and directions made everything so plain. You surely are right in saying Atlas Farm Powder is the easy way to get rid of stumps. It is so much easier than any other way we ever tried."

The book, "Better Farming with Atlas Farm Powder," mentioned by Mrs. Cronister, tells how to use Atlas Farm Powder to remove stumps, break boulders, make ditches and drain swamps. Write for it.

ATLAS POWDER COMPANY, Division FF14, Philadelphia, Penna.
Dealers everywhere Magazine near you

Atlas Farm Powder
THE SAFEST EXPLOSIVE
The Original Farm Powder

Ditch Before Winter Rains

Protect your soil and your next year crop profits against injury by excessive water standing on land all winter. Can work land earlier in spring. Add 2 to 3 weeks to growing season. Do farm terracing now. Get



THE Martin Farm Ditcher, Terracer & Road Grader
All-steel, adjustable, reversible; no wheels, levers or cogs to get out of fix. Cuts new farm ditches or cleans old ones to 4 feet deep; builds farm terraces, dikes and levees; grades roads. Does the work of 100 men. Every farm needs one. Send your name for Free Book and Special Introductory Offer.
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EXTRAVAGANCE has gone by the board. Thrift is in the air. Men are buying where the value is.

The Firestone thrifty 3½ is leading the small-tire field today. Because it is built on real thrift methods from start to finish.

Firestone experts on the spot in the raw material markets of the world are able to get first choice of quality at quantity purchase prices.

Firestone men have worked out the way to produce this tire by concentrated methods—no waste material, no waste motion, no waste space.

And Firestone volume output, through thousands of dealers, permits selling at a close margin. The user gets the benefit. Try this Firestone thrifty 3½.



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Keep Your Truck Going

USE Champion Spark Plugs to cut truck costs. Champion No. 3450 Insulator effectively withstands extreme conditions to which truck motors are subjected.

Champion dependability accounts for Champion Spark Plugs being adopted as standard equipment by more automobile, truck, tractor and engine manufacturers than any other make of spark plug.

There is a Champion Spark Plug for every type of motor car, truck, motorcycle and stationary engine.

Order a set from your dealer today.

Be sure the name *Champion* is on the Insulator and the World Trade Mark on the Box

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No Labor Problem Here

The farm that is properly equipped with power farming machinery has no labor problem. Farm labor naturally seeks it because there the work is lighter, the day shorter and much more can be accomplished.

A Federal is a natural part of every farm's power equipment—it, too, saves valuable time, lightens labor and accomplishes a greater day's work.

The Federal dealer nearest you will be glad to explain its capacities and help select the farm body that will most nearly meet your requirement.

Federal Motor Truck Company
Detroit, Michigan

With a Federal on the Farm



Why So Many Farm Flocks Are Failures

DURING our local poultry show a farmer said to me: "We keep a hundred hens, but they do not pay—at least they do not pay as well as they should. I am disgusted with them."

He invited me to come out and look them over, and said that several members of his community would like to have some advice on poultry-raising. As a number of these families had children who were interested in poultry-club work in our township club, I volunteered to go. Your trouble may not be their trouble, but perhaps the twenty or more farms visited will give some idea of a few of the things that may keep poultry profits down. Of course, all of these farms were not losing money from their hens—far from it—but they were not reaching a maximum profit for some of the following reasons: Poor houses, improper methods of feeding, lack of care, and inferior quality of the stock itself.

Taking the matter of house room first, I found that the first outstanding fault was lack of floor space. Fifteen farms averaged 91 hens each, but the total floor space in the houses on these farms was less than 3,800 square feet. It should have been the accepted rate of four square feet per hen. During fine weather it was not so bad, but when it was stormy many of the houses were so small that the birds were forced to sit humped up. Many of these houses were always damp, and few were either conveniently arranged or comfortable.

In this connection it may be said that six new houses had been recently built in this community, and while they were of types approved by experiment stations and practical poultrymen, in so far as their general lines went, in every single instance the owner had either incorporated some of his own ideas or left out something which he considered of minor importance. These things had lowered the efficiency of the house to a marked degree, and in at least one case made it practically worthless.

THERE are any number of building types that will fit the average farm, but unless you have time to experiment, and are willing to suffer probable loss, it is best to accept them as they stand. The very thing you leave out or change may be the thing which has made the house successful.

A common fault is in building houses too high, wasting material and leaving an excess of cubic space. This takes extra feed in order for the fowls to heat it. Peculiar designs, extra height, and freak construction cost more, and usually detract from the worth of a poultry building, and if we remember that the plain shed roof is as good as any, and better than most, that square construction is the cheapest construction, and that the type of house designed by our experiment station was built to fit the needs of that particular locality, we will spend less money and have better homes for our hens.

Another feature that is of common occurrence is the practice of locating the poul-

try house in out-of-the-way places. None of these houses on the farms visited had feed bins built in them. Where the feed must be carried from the barn or crib twice each day, too much extra work is necessary. This is especially true when the men-folk are busy and the work of caring for the hens falls on the women. Every house, of whatever construction, should have built-in feed bins capable of holding at least a week's supply of grain. It should also contain a mash hopper, for a part of the hen's ration must be ground feed if maximum results are to be attained. Even if it be nothing more than ground corn, ground oats, and wheat bran, this ground feed is essential, for a hen cannot turn enough whole grain into eggs to reach the most profitable point in production.

EXCEPT on a very few of the farms visited, no mash or green food was given the hens. It is a significant fact that those few farms that were doing this showed the best profits. One farm was getting good results from cabbages, beets, turnips, and other vegetables which had been grown and stored for the purpose. Another sprouted oats daily, while another depended on mangels.

When we consider that as much as 25 per cent of the hen's rations may be composed of such feed, and that it invariably increased egg production and the average health of the flock, the result of this lack can readily be seen.

Most of these farms could have raised the quality of their stock to an advantage by the introduction of high-class males, and all of them could have stood a rather severe culling among the females. The best procedure on some of them would have been to sell the flock outright, and replace it with purebred stock after faults in housing had been corrected, or to hatch eggs from purebred, vigorous breeding stock, and gradually get rid of the mongrels. However, even these might have been made to pay a better return for the time and money invested if some of the foregoing hindrances had been eliminated.

One of the hardest things to correct on these farms, and in fact on all farms where poultry is a side line, is the variety of personal attention the hens receive. Mother is busy, so she tells Johnny to run and feed the hens, the job falls to Sister the next day, and perhaps the hired girl has her hand in it too.

As a consequence, the hens go for days, or even weeks, without the personal attention of the person most interested in them. It is difficult to get around to this, and perhaps the best method is to turn the poultry work over to some member of the family that has sufficient interest, and whose time can be best spared. Usually the job falls on Mother, whether she is busy or not, so every convenience should be provided that will aid her in caring for the hens. Of these the feed bin, the mash hopper, and the water fount are the most important.

W. C. SMITH, Indiana.

This two-year-old Angora billy goat sold at San Angelo, Texas, in June, for \$1,750, the biggest price ever paid for a goat in America. It was raised by William Riddell & Sons, Monmouth, Oregon, and was purchased by B. M. Halbert, Sonora, Texas. The State of Texas has 2,000,000 Angora goats, more than any other State.





In 4 Trips Across America Essex 4 Times Breaks Record

Carrying U. S. Mail Between San Francisco and New York It Sets a Mark for Consistency of Performance and Reliability Never Equaled by Any Traveling Machine

The first test of an automobile carrying U. S. Mail across the American continent was made with the light weight, moderate priced Essex. And it resulted in establishing the Essex as holder of the trans-continental record both ways.

The performance while of momentous importance in the world of speed and automobile sportsmanship—is of greater value to the motorist. For it removes all doubt about the reliability of light weight in the most difficult and hardest road service.

Records Prove What Owners Know

Ocean to ocean automobile travel has not become so common as not to be of interest to all motorists regardless of the time required in making the trip.

Hundreds of cars have sought to set new time records between San Francisco and New York. But it has not been an easy accomplishment. The records broken by Essex had stood for four years.

Your demands can not equal those made in the transcontinental trip. But you require equal reliance of your car whatever the service imposed.

Light weight has meant economy of operation in fuel and oil.

It has not particularly meant reliability, economy of maintenance, performance or comfort.

Doesn't It Prove What You Want?

But Essex reveals how those costly car qualities are a part also of its advantages.

You have the praise of close to 45,000 owners, to guide you to the Essex.

You have official records of its 50 hours top speed performance as to its reliability. You have its record of 1061 miles in 24 hours on Iowa country roads.

And now you have this most coveted of all performances—the transcontinental record—made by four different cars. Can you hesitate in deciding for Essex?

First Essex

San Francisco to New York
—4 days, 14 hrs., 43 min.
Lowers Record 12 hrs., 48 min.

Second Essex

New York to San Francisco
—4 days, 19 hrs., 17 min.
Lowers Record 22 hrs., 13 min.

Third Essex

San Francisco to New York
—4 days, 21 hrs., 56 min.
Delayed by storms and Sunday road congestion entering New York.

Fourth Essex

New York to San Francisco
—5 days, 6 hrs., 13 min.
This car took a longer route and also ran into storms. Yet it broke the former record by 11 hours, 19 minutes.

The average time for each of the four Essex cars over 3347 miles Ocean to Ocean route was 4 days, 21 hours, 32 minutes.

Essex Motors, Detroit, Michigan

(223)



WATCH the ESSEX



Gained 25 Times Original Weight in 12 Weeks



Chicks fed milk with their daily rations gained four times as fast as those fed the same materials without milk. None of them died, while the loss from disease among the others ranged from 16 per cent to 40 per cent. Experiment at Wisconsin Agricultural College.

Eggs are chicks in embryo and the same nourishment which brings your latest spring hatches to maturity in several weeks' less time with a gain of 25 times their original weight in 12 weeks, will get you the cream of the poultry profits in early fall and winter eggs. There is no finer food for growing poultry or for egg production than

Dried Buttermilk and Meat Scraps

These are properly combined with the other highly nutritious materials used in **Sucrene Poultry Mash with Buttermilk**. They insure results not obtainable with any ordinary mixture.

Sucrene Poultry Mash with Buttermilk is all food—not a stimulant. It follows nature's law by providing the right nourishment for body building and egg formation. Besides buttermilk and meat scraps, it contains corn feed meal, alfalfa meal, wheat bran, linseed meal, wheat middlings, ground oats, ground and bolted wild buckwheat, salt, calcium carbonate.

Now is the Time

to get big money out of your poultry. Let all your birds have free access to **Sucrene Poultry Mash with Buttermilk**. Feed them regular portions of **Sucrene Scratch Feed**; it completes the ration for growth and egg formation. Place an order with your dealer. If he cannot supply you, write us. The coupon brings you free illustrated literature on poultry feeding.

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Please send free literature checked:

- ☐ Sucrene Poultry Mash with Buttermilk
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☐ Sucrene Chick Feed

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Keep an Eye on Arkansas!

BIGGER things may be expected of Arkansas since Dr. Bradford Knapp, late chief of the Office of Extension Work in the South, has taken the position of dean of the College of Agriculture, University of Arkansas. He entered his new work the first of this year.

Dr. Knapp is the man who originated the term "Safe Farming," which, backed by intense extension work by his department, practically revolutionized farming in the South. It was he who, through the safe-farming campaign, persuaded Southern farmers to install systematic crop rotations and plant other crops besides cotton. The idea behind the movement was to prevent an absolute loss to the grower in case the cotton crop should fail or be spoiled by the boll weevil.

That's what "Safe Farming" means.

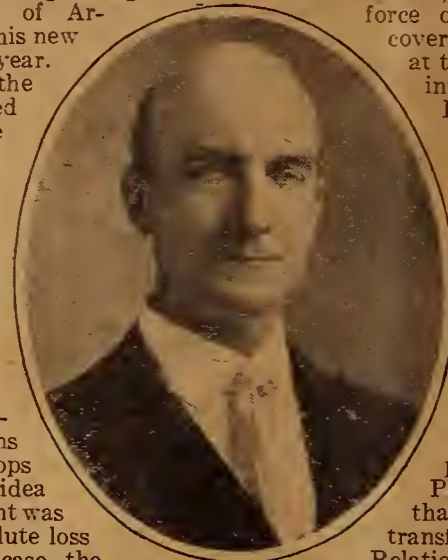
Another of Dr. Knapp's innovations during his ten years in government service was to establish co-operative relations between the government and agricultural colleges in extension work. He first recognized the possibilities in a closer union of the two, and it was he who drew up the first contract for co-

operative work between Government and college. The result has been that the department now has 2,300 workers in the field in the fifteen Southern States alone, in comparison to the force of 478 persons who covered the entire country at the time his plan went into effect.

Dr. Knapp entered government work more than ten years ago as assistant to his father, Dr. Seaman A. Knapp, originator of demonstration work directly with the farmer. Following his father's death, he succeeded him as director of co-operative demonstration work, then a part of the Bureau of Plant Industry. When that department was transferred to the States Relations Service in 1914, Dr. Knapp was made chief of the Extension Office.

The past work of Dr. Knapp has proved him to be a safe and progressive leader in agricultural work. He has been remarkably successful in his undertakings, and people in Arkansas believe his help in their State will place Arkansas among the top-notchers of the agricultural world.

We shall see. ROBERT D. DUMM.



Berries and Eggs Direct

By R. G. Kirby of Michigan

WE HAVE had good luck in selling Cuthbert red raspberries direct to motorists at a price of 40 cents a quart when the town market was only paying 35 cents a quart. We are able to charge more because our boxes were filled very full and the fruit was large. No bits of stems or leaves were included, and buyers found that they could obtain more jam and canned berries from our boxes at 40 cents than they could from the others at 35 cents.

The lack of waste made the fruit appeal to the best class of trade. Most of the orders were sold not to passers-by on the road, but to people who had purchased crates during previous years. They told neighbors and friends, and soon we had more phone orders for berries than we could fill. At the end of the season buyers were still waiting for fruit.

The raspberry deteriorates rapidly, and there is a great difference between berries fresh from the canes and those that are held for a day or two before reaching the consumer. For this reason there is a fine local market in most industrial cities for quality berries.

We have marketed eggs direct in the same manner to buyers who wish to preserve them in water-glass for winter use. The eggs are graded, clean, and infertile. For this reason they command a premium, and are sold in large orders to buyers who generally come after them. They furnish baskets, and the eggs are simply kept cool in the cellar until the customer arrives. One satisfied egg customer will tell a neighbor, the neighbor tells friends, and soon the egg crop is sold far in advance. Customers are notified when enough eggs are saved up to fill an order, and they then drive over to get them.

IT IS often difficult to sell direct to the consumer without the producer wasting a lot of time. But this year, with raspberries and eggs, it has proved unusually satisfactory. Buyers seem more used to paying a fair price for quality produce, and seem glad to get it at any price. It is largely a matter of locating a line of quality customers and then making every effort to please them, so they will come back each year in sufficient numbers to use up all the products for sale.

Another factor of importance enters into such deals: On every farm there is apt to be a surplus of such products as squashes, beets, broilers, fat old hens, etc., which cannot easily be sold direct because there

will not be enough at any one time to pay to advertise, and one customer will not need enough to pay for a trip with the car. But when berries and eggs are used as leaders the amount of business is large enough to warrant a trip. Then a lot of small stuff can be worked in, and it helps to swell the sales.

The use of the cold pack is a great boon to the truck gardener selling to the consumer. The berry and egg buyer may wish to can such a crop as peas or Kentucky Wonder beans. Such a crop surplus can often be sold direct by the bushel. When consumers learn the value of the cold-pack method of canning, it will increase the chances for direct marketing. The farmer cannot afford to be a huckster, but he can do a bushel business to good advantage when the consumers drive out for the goods.

R. G. KIRBY, Michigan.

A Grain-Tight Hay Rack

I HAVE found that it has paid me to make the floor of my hayrack of good material. At the time I made this one (two years ago), flooring of the ordinary yellow pine cost about \$50 a thousand. A good rack builder told me that it would be the very best thing to get edge-grain stuff for the flooring, and to get narrow pieces. So I bought four-inch edge-grain flooring at \$65 a thousand. I am very glad that I did it, as my rack has to stand out part of the time, and where other newer but cheaper racks are cracked open so that grain can't be hauled loose, mine is still in good shape, and edge-grain stuff does not sliver up when shoveling on the floor, like regular flooring.

This is another case where economy consists in paying enough to get high-grade material. It goes against the grain to do this sometimes, but I have never bought a quality product yet that I regretted afterward.

Here is an idea in fastening the floor of a rack down that is worth while: I blind-nailed the whole top, and find that it pays. This means slanting the nails, and I feel that this will partly prevent their pulling out, as they do when put in straight from the top. A neighbor who has just made three racks used screws on the last one. This serves the same purpose, as the screws do not work out either. A lot of farmers have found that the hayrack with a tight bottom and a set of side boards makes a fine box for loose grain hauling. E. R.

Turn Coal Shortage Into Cash

NOW is the time to make big money with this fast-cutting sawing machine, the **OTTAWA Buzz Saw**. Own your own saw rig that will cost just a little over \$100. Saw your own wood in a few hours and then make big money sawing for your neighbors, or supplying wood for fuel at nearby towns. Many report \$11 a day profit. Easy to use, no high lifting of logs. Cuts anything up to 10 inches.

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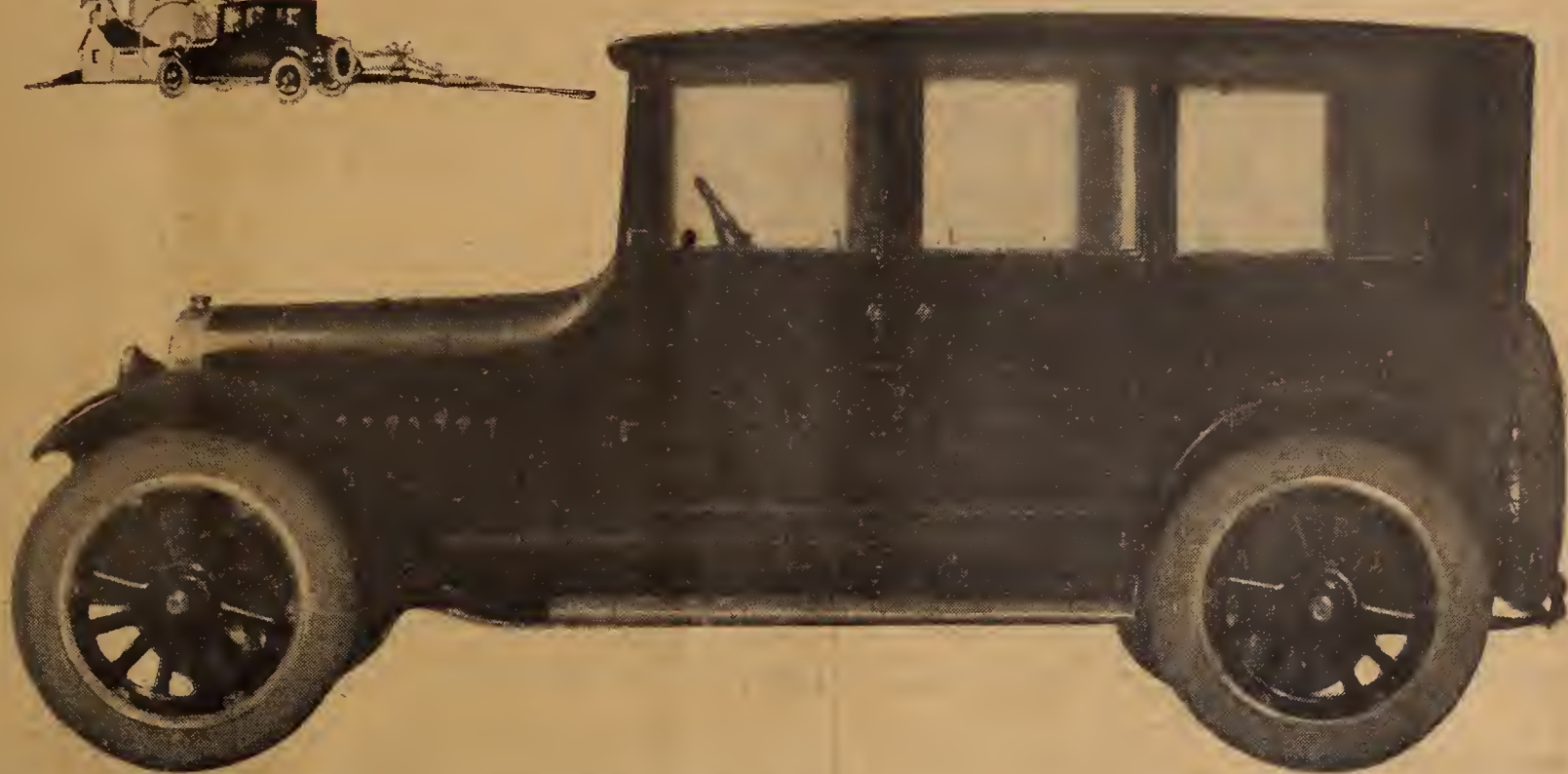
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contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea. Very few people have escaped these film-caused troubles.

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Compare the results with your old methods. Then let those evident results tell you what is best. Cut out the coupon now.

Eating and Sleeping Habits

[CONTINUED FROM PAGE 17]

and interested at eating with this special spoon, and he will also enjoy having a smaller fork of his own. If these measures are not successful, he must be persuaded to allow his mother to feed him for a week, which should be long enough to overcome the habit.

Water may be taken before and after meals and during the meal, provided there is no food in the mouth. The habit of washing down food with liquids leads to imperfect assimilation and indigestion. In general, a child needs at least two quarts of liquids a day, and the tendency is not to drink enough. But liquids should be kept out of his reach at meals, so that he will not fall into the habit of drinking with his food, which is a common fault of fast eaters. The water should be cool, but not iced, and milk should be considered as a food, to be taken slowly, and not used to quench thirst. An overheated, tired child is just as much injured by drinking too much cold water as a tired horse would be if so treated at the end of an active day.

Indoor temperature should not be kept above sixty-eight or, at most, seventy degrees, and the air in an overheated room is usually too dry as well as too warm. Experiments show that both children and adults fall off in their working efficiency as soon as the air rises above this point. Air in motion is much better than still air, and electric fans and other devices for keeping air in circulation have a value beyond the immediate comfort they afford.

A fear of drafts usually indicates a condition of sensitiveness which ought to be looked into and changed. It is, of course, dangerous to allow sudden chilling of the body, as this gives lodging place to bacteria and may develop into various forms of acute infection. But there is no danger from open windows at night, if protection from direct draft is secured by means of screens, or by placing a blanket over a chair by the bedside.

In the treatment of malnourished children we have found that those who sleep on porches or under window tents gain in weight much faster even than those who have their windows wide open. Country children have a great advantage in that their activities lead them naturally to spend much time in the open air. It is not only necessary that they should be outdoors as much as possible, however, but also that the air should get into their lungs. This means that all obstacles to breathing must be removed. Nearly half the children who come to our nutrition clinics show bad condition in the nose and throat, resulting from diseased adenoids and tonsils—a most important factor in checking growth.

THE growing child does not need drugs. In many families it is still the custom to give a child medicines strong enough to do injury to an adult. The temptation most commonly appears in a supposed need for tonics and laxatives. Tonics are rarely necessary, and should only be given when there is an adequate reason. If the child has a sufficient variety of food he will be supplied with all the iron and salts he requires.

Good health habits and proper food make the use of laxatives unnecessary. There should be a regular time for the bowels to move, at least once a day, preferably just after breakfast, when the child should be free from hurry, worry, and nagging. Many mothers are so fearful the child's bowels will not move that they continue to give cathartics when there is no possible need. If a day is skipped occasionally it does not necessarily mean harm.

If a drug has been used and the habit formed, begin at once to reduce the dose, and do not stop until the habit is broken. The only time an exception should be made is in a case of acute indigestion, when a good dose of castor oil, given immediately, will remove the undigested food and enable the child to begin anew.

This habit of a regular movement, together with the plentiful use of fruits and coarse foods, will take care of the bowels without the aid of drugs, all of which are pernicious when taken habitually. A further help is the drinking of plenty of water, especially before breakfast.

The malnourished child needs more clothing than the well child. One of the physical signs of malnutrition is cold hands and feet, indicating impaired circu-

lation. In winter, extra care should be taken to keep warm, especially when sleeping out. Blankets or newspapers should be put under the mattress, because if there is insufficient protection from below no amount of covering will keep the child warm. As a matter of routine, a hot-water bottle should be put into the bed well down in the corner so that the feet will not be near it unless necessary.

During the day there should be only enough indoor clothing to keep warm without causing perspiration. Coarse-meshed cotton or linen underwear is better than woolen, as it permits greater circulation of air; but in winter outer garments should be of wool, and woolen stockings should be worn. Sudden changes of clothing must be avoided, such as the change from heavy to light underwear, and from high to low shoes.

Many mothers are too much concerned with appearances. Irritating, stiff, or tight collars, and clothes which the child has to worry about, are often the direct causes of ill health.

A cold chest bath in the morning serves to harden the skin and to protect against changes in temperature. A warm neutral bath at night is good, and if the child is very tired a hot bath will restore the circulation and give rest without overstimulation.

A child should be taught to bathe properly. He should be thoroughly clean in the morning and at night, but there is a good deal of sense in his own idea that he can do his job in this line morning and night and not bother too much about it between-times.

THE malnourished child often has poor circulation. For this reason swimming in cold water, either fresh or salt, should be indulged in with caution. The test is the condition shown when he comes out of the water. If he is shivering and blue, the bath does him harm. On the other hand, if his reaction is good, his skin glowing and red, all is well.

Rubbing is of special value in connection with all bathing, as it increases the activity of the skin, and helps in eliminating waste matter from the body. We have heard men say that the best thing they learned in college was the value of exercise with the bath and rubdown following it. When children come in perspiring, tired, and irritable, remove their clothing, bathe them, rub dry quickly, and put them into bed for a short rest.

With all the natural advantages of country life, there should be no malnutrition among country children. Where it does exist, there is a cause, and this cause should be found and removed. With good food and fresh air, and abundant opportunities for healthful exercise readily at hand, the problem is much simpler than in the crowded, artificial conditions of the cities. Remember that *Nature always makes for health, and usually succeeds unless there are conditions too unfavorable for her to overcome.*

Too much cannot be said about the power for health and success that results from good health habits. I recall the cases of two friends in college—the one, a hard student; the other, a noted baseball player. Everyone looked forward to a life of brilliant success for the student, but he broke down early and has never been heard from. The other was by no means so promising, but he lived a wholesome outdoor life and developed both mind and body. Starting with less than the other, he has continued to grow, and to-day is one of the leading men in his field.

It has rightly been said that if one is well at eighteen he will probably remain well the rest of his life. Herein lies the value of well-ordered family life, which brings about regular habits of eating, sleeping, work, play, and even of bodily functions. We are coming to believe that ill health is due largely to ignorance, and that it is to a certain extent a matter of disgrace. The habit of health once attained in your childhood and youth tends to continue throughout life.

Can you give your children anything better than this?

NOTE: This is the second of Dr. Emerson's series of articles on child health. The third will appear in the November issue. The first article appeared in the September issue.

THE EDITOR.

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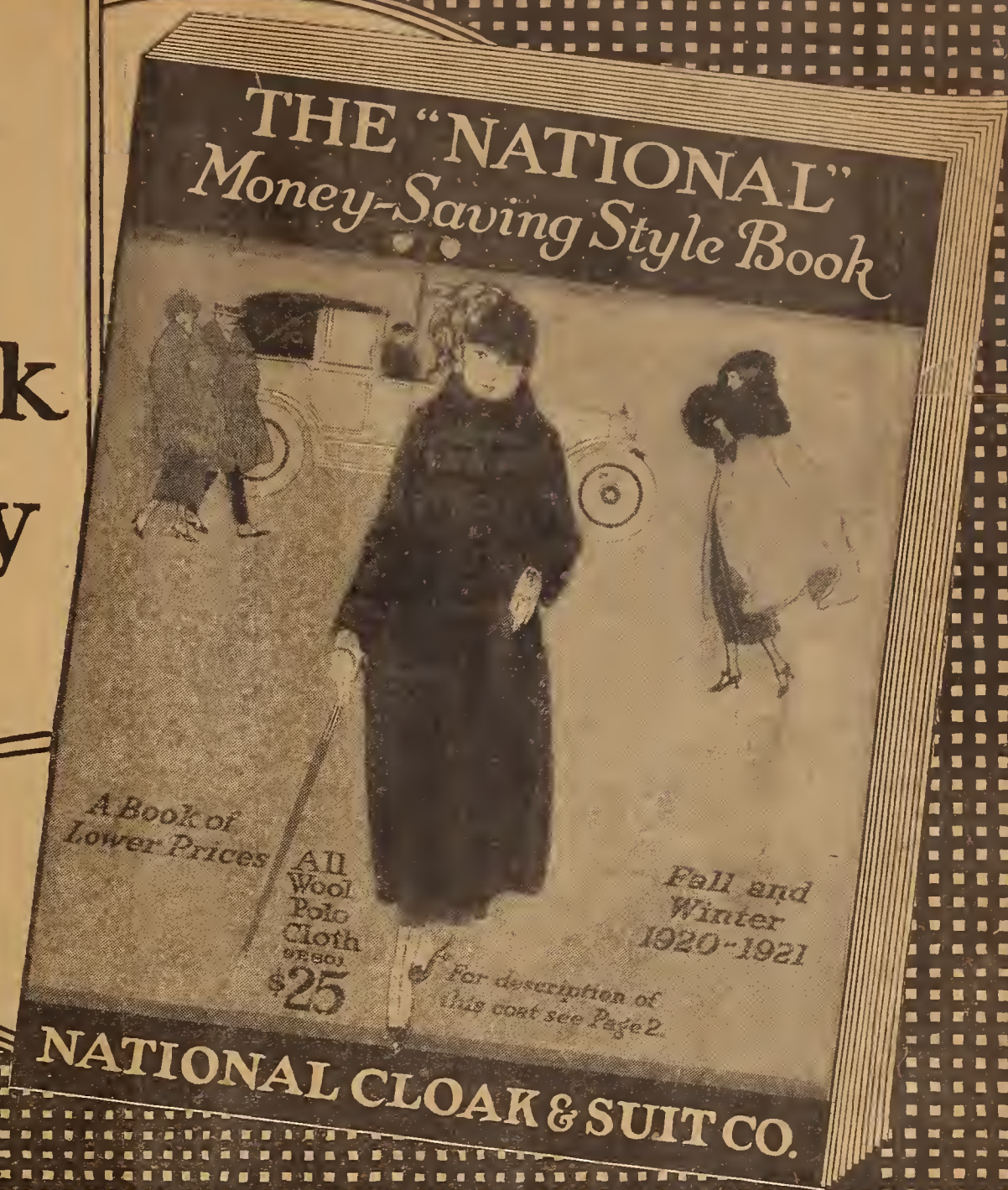
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My Four Big Fruit-Marketing Problems

[CONTINUED FROM PAGE 6]

Preferably the top of the barrel should be faced also, as that end is sometimes opened, just to test the pack. Needless to say, the "stovepipe" method of filling the middle of the barrel with culls is no longer considered good business. That sort of thing, in the East, gave the Westerners their chance of competing for Eastern markets from a 3,000-mile range, with an absolutely honest pack!

There is not space here to go into the subject of box packages and packing, but you can get information on that from your county agent, and if you have good fruit it will certainly pay you to do it.

I believe the biggest opportunity overlooked by the small grower is that of co-operating with his local dealers in a selling campaign—one that will make your particular brand of fruit so well and favorably known that it will command a premium.

The Worm with His House on His Back

[CONTINUED FROM PAGE 18]

you speak of and we will be satisfied. We shall not work."

"And you will never have a chance to work!" cried the dame, and at the same instant a big wave came from the lake and rolled the balls into the water, where they lay for a long time, the mud finally turning to shell."

"Well!" exclaimed the killdeer, interrupting the snail's story.

The shadows were growing long now, and the frog began to croak in answer to the sawing of the katydids in the distance.

"Go on," the killdeer said to the snail, at the same time motioning for the frog to cease his clatter, "I am sorry I interrupted you, but I was deeply interested."

"There is little more to tell," continued the snail. "For a time the worms liked the life, but once in a while, when they were washed to the beach and beheld the pretty butterflies flitting over the landscape, they wished to leave their tiny houses and be free. And that's all I have to tell, and you will excuse the tear that just fell from my eye, I am sure."

With a deep sigh the snail moved toward the water of the pond, dragging his little house with him, of course; the frog croaked again, and the killdeer spread his wings to make sure that he could fly at will, remarking, as he did this, "I hope that Dame Nature will never take a notion to make birds remain in the shells of the eggs and crawl over the country like snails."

Mr. Killdeer, after talking to the frog a moment, soared away. He had just left the beach when a lot of butterflies arrived to sip moisture from the sand, and these butterflies remarked, seeing the snail humping himself slowly away: "What a queer thing a snail is! We sleep in the pretty, perfumed hearts of flowers, and that poor creeping thing cannot move without labor, neither can he change his home."

Why is a Farm Bureau?

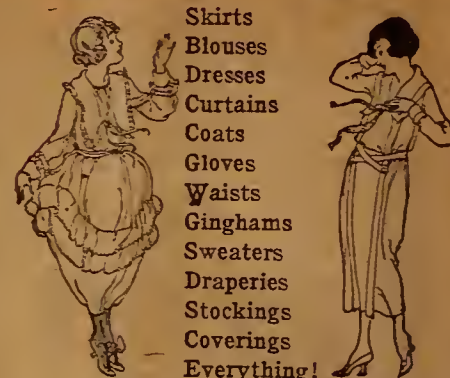
ALIVE farm bureau is one of the busiest organizations in a county. Just how busy it can be may be realized by learning what the Cass County (Missouri) Farm Bureau is doing this year. This bureau is conducting the following demonstrations: 51 soy beans, 14 hog-feeding, 4 soil-saving, 22 poultry-culling, 11 oats-smut control, 12 alfalfa production, 3 killing army worms, 8 orchard-spraying, 8 wheat-smut control and 46 fertilizer demonstrations.

The bureau is promoting the following associations: farm loan, livestock breeders, Shorthorn breeders, Hereford breeders, Poland-China breeders, and fifteen community organizations, besides four calf clubs with a total of 157 calves. In the meantime, the bureau has found time to locate 1,108 bushels of seed corn, test 5,889 ears of seed corn, and sell \$80,501 worth of products this year.

Perhaps this will answer the question, "Why is a farm bureau?"

Those who study plant diseases put their O. K. on Japanese barberries. The tall-growing, green and purple leaved varieties are the ones that harbor wheat rust.

Dye Right

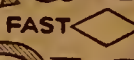


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Post Armistice

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Policin' th' streets, cussin' th' frogs.
Groomin' th' mules, luggin' 'em hay,
War is all over, time to parté.

Clock in th' square, standin' dead still,
Battalion maneuvers, takin' a hill.
Wine in th' even', mademoiselle,
Out in th' mornin', feelin' like hell.

Didn't see shavetail, didn't salute,
Stand at attention, bawlin's a beaut.
Sweep out the billet, kitchen police,
Some lemon extract, buckets o' grease.

Breakin' on limbers stealin' a ride,
Colonel in auto, lose half y'r hide.
Bottle o' cognac, gallopin' cubes,
Mess sergeant's richer, rest of us boobs.

Waitin' and longin'. prayin' to sail,
M.P.'s like cooties, town like a jail.
Orders come runnin', tomorrow's the day,
War is all over, time to parté.

—FRED G. SMITH.

Courtesy "The American
Legion Weekly"

For Ex-Soldiers and Their Families

MANY of you who served in the war have taken advantage of our offer to help you get your relations with the War Department straightened out. We are anxious to have every reader of FARM AND FIRESIDE who was in the service, or who had relatives in the service, get his or her problem satisfactorily solved. So if there is anything puzzling you with regards to bonus, Victory medal, insurance, clothing, or compensation, tell me about it and I will give you the best information to be had, or put you in touch with the proper authorities. The War Department, Bureau of War Risk Insurance, and the American Legion want you to get a square deal, so don't be afraid to put in your claim.

Write, enclosing self-addressed envelope, to Andrew S. Wing, American Legion Column, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Our Mudless Home Walks

THE muddy season has now lost most of its muddiness around our home buildings, where permanent cement walks have taken the place of makeshift gravel, cinders, and unsightly board walks.

For years, during the spring and fall months, sticky clay mud made life a season of cleaning indoors as well as out. Now we can walk dry-shod in any weather to stables, poultry and hog houses, garage, ice and smoke houses, etc. Is it an improvement? Just listen to the refrain of "Yes, Yes, Yes" from every member of our family.

We began at the rear entrance by making a wide cement platform on which vehicles can be driven for unloading and loading, leaving room on all sides for walking. This platform was also extended into the corners at the sides of the enclosed porch to make a dry place for temporary storing of produce.

From this cement platform the walks extend to the various buildings, forming curves and angles to lessen walking and to make the effect attractive. The walks were built to a height of only about an inch above the ground level, so that a lawn mower will cut the grass along the edges. The front cement walk was previously in place, winding slightly from the road entrance until it joins the cement porch on either side. The siding of our house is pebble-finish stucco, and that, together with our new walks, gives a substantial effect that affords a satisfying solace when our neighbors are using their paint brushes.

The expense of our walks was but little more than the cost of the cement, the work being done at times when the workmen were not needed for other farm work. A. L. ROAT, Pennsylvania.



The use of lard in cooking again proved old-fashioned and expensive

FOOD fried in lard (animal fat) soaks up the fat which is not only wasteful, but it makes the food greasy and indigestible.

Mazola, the Great American Cooking Oil, is used so much hotter it cooks the outside of the food quickly. Hence it doesn't soak into the food—to anywhere near the extent of lard.

This fact was again demonstrated when Mrs. A. Louise Andrea, famous expert in modern cookery, fried 25¾ lbs. of fish steaks in 2 lbs. of Mazola. The same amount of lard fried only 16½ lbs. The fish steaks were cut to an average thickness of one inch.

During the same series of experiments—which can be duplicated by anyone interested—Mrs. Andrea fried 24½ lbs. of potatoes in 2 lbs. of Mazola, while the same amount of lard cooked only 7 lbs. 14 ozs. of potatoes.

Also, of doughnuts, Mrs. Andrea fried 208 in 2 lbs. of Mazola, while 2 lbs. of lard fried only 138 doughnuts.

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How I've Farmed Successfully for Forty Years

(CONTINUED FROM PAGE 7)

subsoil. If this plant food is not liberated, crops will feed on the elements in the surface soil, and within a short time this will run low.

What I do to liberate this in the subsoil, and bring it up to where crops can get hold of it, is to grow deep-rooted clover. I find that the roots of red clover, for instance, will go down as far as five feet into the subsoil. The plant food down there is brought up to the surface soil, so, by turning under the second crop, the surface soil gets the benefit of the nitrogen in the roots and in the stalks.

Deep roots also increase the moisture-holding capacity of the subsoil, and make the land more porous. Deep roots come when the stand of clover is very thick. My observation is that when the stand is thin, the roots spread out. To obtain these deep roots, I sow a mixture of red clover, alfalfa, alsike, and timothy, and I find that this combination produces more hay than any single one of them.

WHEN you come right down to it the matter of maintaining and increasing soil fertility is purely a mathematical problem. Our experts tell us how much of the more important elements is contained in each bushel of grain or ton of hay, and they tell us what element, and the amount, each of our fertilizers contain. The thing then to do is to get out a pencil and paper and do a little figuring. In a short time we know how much nitrogen, for instance, we need to grow a 50-bushel crop of corn, and if we are not getting that much off our land we know how much nitrogen must be in the land.

For instance, it requires one and one-half pounds of nitrogen to grow a bushel of corn, two pounds for a bushel of wheat, and one pound for a bushel of oats. One third of the nitrogen required to grow these grains may be returned to the soil by plowing under crop residues. To grow a 50-bushel crop of corn, if I plow under the stalks, I must have at least 50 pounds of nitrogen in the soil.

How am I going to put this much nitrogen into the soil? Easy. The second crop of clover, which I plow under, amounts to more than three tons; and, since we know there is 40 pounds of nitrogen in a ton of clover, this means 120 pounds go back into every acre. Coupled with this I have the nitrogen in both sub and surface soil, which will be liberated when the roots decay. Figuring the clover alone, I have enough nitrogen to grow 120 bushels of corn.

It is my experience that where not more than a ton to a ton and a half of clover is grown, but little, if any, nitrogen is added to the soil by plowing under the crop. This is a common condition over the country, and people believe they are increasing the fertility by doing so. They are not, for they are just putting back what they took out.

WHEN clover is cut, but little, if any, nitrogen, either in the form of air nitrogen or that produced by decaying vegetable matter is supplied. The nitrogen comes when the crop is plowed under, at which time the air nitrogen is added, and that from the decomposition of roots and plants.

There are two sources of nitrogen for legumes—air and soil. The more the crop takes from the air, the less the soil has to furnish, so at the end of the season, when the crop is plowed under, this nitrogen taken from the air or soil, used to make the plant, is added to the supply in the land.

Grains, including timothy hay and blue grass, get their nitrogen from the soil, so the position clover plays in my farming for permanent and increased fertility is easily seen. The more nitrogen I can store in the soil through the use of legumes, the more of this element I will have to produce bigger grain crops.

It is conclusive that plants will fix atmospheric nitrogen—that is, take nitrogen from the air—only in proportion to the amount of calcium and phosphorus they are able to get out of the soil up to the seasonal limit. If, in sweetening our soil to grow clover, we add limestone, we satisfy the desire of clover for calcium, so the remaining factor in the fixing of nitrogen from the air would be phosphorus.

On sour soils I added five tons of limestone, and got 2 1/4 tons of hay; but when I added 1 1/2 tons of phosphate I got four tons of alfalfa in a season. And when I increased the phosphate to four tons, I got 6 1/2 tons of hay. And this is not the limit, I believe.

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Of all the elements needed for permanent fertility and productiveness, phosphorus is the most easily applied. Enough can be put into the land at one time to last for years.

Its function is to mature plants which includes forming the vital parts of the grain, while the nitrogen grows the stalk and the leaves, which fix the carbon out of the air.

The cheapest way I can buy phosphate is in rock form. The element in this state is inert, but if there is plenty of humus in the soil the acids and bacteria which it forms will break down the rock and liberate the elements as they are needed by the plants for food.

I find a good grade of rock, ground finely enough so it will pass through a 100-mesh screen, containing from 12 to 13 per cent of phosphorus, is good to use. Every ton applied to the land means that from 240 to 260 pounds of phosphorus is put into the soil; and, since it requires only 23 pounds of phosphate to grow 100 bushels of corn, it is plain that an application of one ton is enough to last for a number of years.

I found that putting on 1,000 pounds of phosphate was highly profitable every four years; but since I wanted to increase my fertility and crops I put on a ton.

The best time to apply it, I believe, is on clover ground which is to be plowed under. For that matter, it may be spread any time of the year, as there is no danger of loss. It should be disked into the soil before plowing.

It is my opinion that to maintain and build fertility three things are necessary: To grow and add to the soil enough legume crops to supply sufficient nitrogen, active matter, and humus; to add more phosphorus than is removed in the crops; and to supply calcium and magnesium, and prevent soil acidity by the use of limestone. Nothing else need ever be done for permanent and high productive power of normal soils.

Farmers Checking Profits and Losses

SEVERAL thousand Nebraska farmers are keeping an accurate record of their business this year, partly in order to be able to determine their income tax, and partly to know the cost of production and whether they make profits from their crops and livestock. They are using a farm record book compiled by the State College of Agriculture, and distributed by banks, county farm bureaus, and the college itself. This book is the result of several years' study and investigation by the college, aided by practical farmers who had worked out a system of farm bookkeeping whereby they would have a record of their expenditures, receipts, and profits or losses. High-priced land and high cost of production have increased interest in farm bookkeeping, and the income tax has made it almost necessary that many farmers keep books.

How the Farm Bureau Works in Scott County, Missouri

(CONTINUED FROM PAGE 19)

last subject. A boy's corn club was organized, each member agreeing to grow an acre of corn. A premium was offered by the community to the boy who could produce the greatest number of bushels to an acre, and a good premium it was—a free trip to attend the annual farmers' week at the state agricultural college at Columbia next winter. The boys present seemed greatly delighted because they had been remembered, and pleased with the prospects of getting a free trip to Columbia.

A program of work was developed at this meeting, and four definite lines undertaken. First, variety tests of corn. Second, a trial of acid phosphate to improve wheat yields. Third, locate a supply of limestone, and use it to correct acidity in the soil. Fourth, encourage boys and girls to stay on the farm, through club work.

A committeeman was elected to head each line of work to be undertaken. They also selected a permanent chairman of the community organization. The chairman is the local leader of the development work, and is the county agents' point of contact with the community.

What has Mr. Foard been doing here? Developing leadership and helping the farmers to see their problems and solve them. There are twenty-four such communities in Scott County, and each one is working on its own special problems.

R. M. ROLAND.



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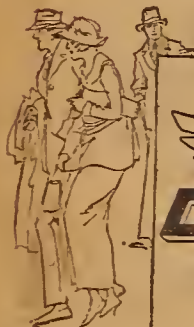
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Here are Three Recipes You May Like

EVERY recipe published in FARM AND FIRESIDE is tested and standardized by Mrs. Nell B. Nichols, our corresponding household editor. This not only means that each one must come up to a high standard of excellence, but also, whenever serving portions are to be considered, that the recipe has been proportioned to serve a family of six.

STUFFED ONIONS

6 large onions	1 tablespoon chopped parsley
6 tablespoons bread crumbs	1 cup grated cheese
2 tablespoons butter	1 teaspoon salt
4 eggs	½ teaspoon pepper

Peel the onions, cut in halves lengthwise, and parboil in boiling salt water ten minutes. Drain, and place the outer shells in a buttered pan. Chop the remaining onions, put in a mixing bowl, and add the bread crumbs, butter, eggs, parsley, cheese, salt, and pepper. Mix well, and fill the onion shells and bake until the onions are soft.

PEPPER AND ONION RELISH

This is just the time of year to make this pepper and onion relish, since peppers are at their best just now. Then, in January or February, when the whole family begins to be the least bit bored with just food, this relish will serve as a wonderful appetizer.

6 pounds peppers	4 chopped onions
1 tablespoon powdered cloves	½ tablespoon each of powdered cinnamon, allspice, and ginger
2 teaspoons powdered mace	Vinegar to cover

Take the seeds from the peppers and put them into a clean saucepan, add chopped onions, cloves, cinnamon, allspice, ginger, and mace. Pour in enough vinegar to well cover, and simmer for four hours. Rub through a sieve, cool and bottle.

BAKED CHOCOLATE PUDDING

This is a good dessert when sugar is scarce:

¼ cup fat	¼ teaspoon salt
2 eggs	3 tablespoons sugar (brown or white)
2 squares chocolate	1 cup corn sirup
1 teaspoon vanilla	½ cup milk
3 teaspoons baking powder	1¼ cups wheat flour

Cream the fat and sugar, add the egg yolks and syrup. Melt the chocolate, cool slightly before adding to mixture, and beat well. Sift dry ingredients together, and add alternately with the milk. Add vanilla, and fold in the stiffly beaten whites. Bake in a loaf in a moderate oven, cut in squares, and serve with lemon dressing.

That Versatile Adhesive Tape

I HAVE found that a good quality of I surgeon's adhesive tape is a true friend, aside from its uses for covering cuts and bruises and holding bandages in place. It can be used to repair all sorts of rubber articles—hot-water bags, syringes, garden hose, mackintoshes, and boots. I use it by applying a warm iron over the patch.

A small piece around my finger when knitting, crocheting, or hemming by hand has often kept my finger from becoming sore. To avoid trouble at school in telling their overshoes apart, I cut the tape into strips, write their names upon it, and paste it into the back of the children's overshoes and rubbers. I carry out this same idea with the boy's caps. I also make ideal labels for bottles, cans, and jars from the tape, and write upon it with ink.

If a new pair of shoes rub the heel at the top of the heel stiffening, I put a piece of tape over the lining, and have no more trouble. Should a window pane get cracked in cold weather, a piece of tape will hold the edges together. I always hold broken dishes together with the adhesive tape while the cement is drying. When fumigating a room I discovered that the tape could be used along the windows to exclude the air, and I make use of this discovery in cold weather to keep out the cold air around the kitchen door.

Indeed, I do not know how I could keep house without my adhesive tape in its several widths to help me mend the accidents and breaks which occur in everyday life.
Mrs. A. E. R., Minnesota.

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out emptying the purse: it costs but \$1 a year. If you want a paper in your home which is sincere, reliable, entertaining, wholesome, the Pathfinder is yours. If you would appreciate a paper which puts everything clearly, strongly, briefly—here it is. Send 10c to show that you might like such a paper, and we will send the Pathfinder on probation eight weeks. The 10c does not repay us, but we are glad to invest in new friends. Address: The Pathfinder, 292 Langdon St., Washington, D. C.

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LOOK BEST—WEAR LONGEST

The SERVICE SHOE Co., Drawer 1118, Worcester, Mass.

How We Took the Dread from Wash Day

IT SEEMS that anything that gives light on lessening the drudgery of wash day is appreciated, especially by the women, as washing seems to be one of the housewife's most undesirable duties. I never understood why it should be, until once when my wife was sick and the hired girl refused to do the washing.

It was up to me to do it, so I got out the two old wooden tubs and the washboard. I waded right in, rubbed the skin off my fingers, slopped the water all over me, nearly broke my back, and the clothes were a sight. I found out why my wife had dreaded wash day.

I decided that I would investigate, and if an easier way could be found we would adopt it. I visited several farms that were equipped with power washers. The users all claimed them to be quite efficient, but in most cases I found the water had to be heated in the house, then carried to the wash-house.

In some cases the washer was situated in the cellar, which seemed to be rather dark and damp. Finally I decided to work out a system that would suit our requirements, and in the following I will try to describe it:

WE HAD a wash-house 14x20 feet. I connected a drain with the center of this, and concreted the floor with a gradual slope toward the drain. Thus any water spilt on the floor would run to the drain, and the floor could be flushed to clean it.

In one corner I made a concrete box into which I piped running water. I purchased a two-tub power washer with wringer attached, sixteen feet of shafting, four boxes, two pulleys, and a small gasoline engine.

In the end opposite the water box I placed the engine, and fastened the shafting to the ceiling about two feet from one side of the building by means of the boxes. I belted the engine to one end of the shaft, and the washer to the other. Then came the question of heating the water. I purchased a three-burner oil stove, and had a tinner make me a boiler to fit with a faucet at the bottom. This I put near the water box, and as far from the engine as possible.

Now when my wife wants to wash she lights the oil stove, attaches a hose to the running water faucet, and lets the boiler fill. In about fifteen or twenty minutes the water is boiling. She then attaches a hose to the faucet on the bottom of the boiler, and lets the water run to the first tub of the washer. She then attaches the hose to the running water faucet again, and lets the boiler refill while she puts the clothes and soap in the washer.

Next she starts the engine, and by the time the water is heated the clothes are ready to be run through the wringer into the second tub, where they are rinsed, the boiling water being then admitted to the second tub.

The first tub can now be filled with more clothes. When the clothes are in the rinse water about ten minutes they are ready to be run through the wringer and hung up. The dirtiest of clothes should be thoroughly cleansed, but if some are not they can be put back and taken out with the next lot.

THIS system of washing has worked out very satisfactorily. The biggest washing can generally be done in less than two hours, and there is no hard work. The water does not even have to be lifted. The oil stove is set high enough to bring the bottom of the boiler even with the top of the tubs. Thus the running water flows through the hose to the boiler, and after it is heated it flows from the boiler to the tubs.

When the washing is done the plugs in the bottom of the tubs are removed, and the water is conducted through a tin pipe (such as is used for eave spouts) to the drain where it runs from the building.

The floor is then flushed, and the water runs to the drain, leaving the floor clean.

There are windows on three sides that admit the sunshine, so the wash-house is always sweet and clean. The cost of operating, not to figure depreciation, is about 10 cents an hour.

Before we purchased our equipment I wondered if we could afford it. Now I wonder how we afforded to be without it. I find it is as efficient a labor-saving device as we have on the farm.

If you are sewing ball-and-socket snaps on a garment, try sewing the ball snap on the upper piece. Your snap will never show then, as this part has a smooth back and leaves no mark as the rounded back does.

M. S., Iowa.

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2063 Oakland Ave., Kansas City, Mo.
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A Hallowe'en Tour

By Emily Rose Burt

THE whole school was excited by the following notice from the entertainment committee of the enterprising junior class; it promised to be a truly different Hallowe'en party:

In duster, motor cap or veil,
Or other touring tog,
Appear ye kindly without fail—
We're off for Queeroquag.
On Hallowe'en, on Hallowe'en,
Each one a motor king or queen,
We'll trip and tour the evening through.
Who'll come, who'll come, will you?

So they scoured their wardrobes for appropriate motoring costumes. For the most part, the girls chose to look their smartest and prettiest with tams and trimly veiled hats, but the boys aimed at looking as caricaturish as possible. Almost everyone, however, wore glaring goggles, so the entire result was quite unique.

Two of the junior boys, blackened as to face and hands in garage-man style, and clad in overalls, "received" at the door to the extent of directing everyone to the "garage" first. Over the entrance to the basement stairs was a sign "Robber's Garage." In the garage a number of choice garage sprites, overalled and blackened, conducted the visitors through such stunts as "tanking up," "changing a shoe," "tuning up the carburetor," or "giving free air."

With old automobile licenses, worn tires, and automobile parts just visible in the dim light, these processes were pursued as follows:

"Tanking up" was drinking a concoction which would have been agreeable enough as water if salt had not been dissolved in it.

"Changing a shoe" involved exchanging footwear with someone else present.

"Tuning up the carburetor" was singing a song, while "giving free air" was accomplished by speaking a piece.

With these preliminaries the garage men allowed the motorists to ascend to the big assembly hall, where chairs were grouped in fives to represent automobiles—the five-passenger variety. It appeared that the route was full of scenic attractions, such as Punkeneeto Mountain, Mirror Lake, and Wizard's Peek. The "autos" in turn reached each of these attractions, whereupon the occupants descended and began explorations.

Punkeneeto Mountain was the label, it seemed, for a pie-eating contest. Each person was assigned a wedge of pumpkin pie, and the idea was to see who could get away with it first.

MEANWHILE other motorists were pausing at Mirror Lake. Here each person performed the old Hallowe'en stunt of walking backward down stairs with a candle and a mirror to see what face would appear. A lad with an array of different masks at the dark bottom of the stairs enabled the girls to see Santa Claus, Indians, and pirates: the boys beheld equally startling ladies' faces.

Wizard's Peek was a favorite resort for it meant the future revealed. In a small tent, lighted by a purple lantern, the white-bearded fortune teller in flowing robes read a crystal ball, and then produced on a slip of paper the fortune that he saw there.

The Lookatem Galleries was announced as a famous portrait exhibit in Gaw

Center. Bob Apple, Jack of the Beanstalk, Flower of the Family, and the Old Life-Saver were each posed behind a placarded curtain.

Shrieks of laughter from behind the curtain would have led you to imagine the portraits very funny. In reality, each portrait was one of the time-honored old Hallowe'en tricks. In turn they were: Bobbing for apples, throwing beans into a jar at a certain distance, slicing down a mold of flour till the penny comes to view, and then removing it with the teeth, and finally biting at a swinging doughnut.

By this time lunch was heralded—a picnic one, naturally, and paper tablecloths gay with Hallowe'en cats and witches were spread on the platform, paper plates and cups were whisked out, and everybody proceeded to act as picniferous as possible. A stuffed spider and some mechanical tin bugs set in motion by the boys caused some true picnic thrills.

There were little sandwiches spread with chopped chicken livers, olives, individual chicken salads, caramel ice cream with some sort of motor favor stuck in each portion, home-made jumbles, and lollypops, each one of which had a goggled face painted on its wax covering.

After lunch the next stop was declared to be "The Seven Sisters' Inn," where there was dancing every afternoon. The motorists were lucky enough to arrive in time for it, and pushing their automobiles back against the wall they proceeded to spend the rest of the tour in dancing to the music of a good orchestra.

EDITOR'S NOTE: Fortunes for the Wizard's Peek will be sent on receipt of stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Hallowe'en Recipes

CANDIED apples and oatmeal cakes are always seasonable for Hallowe'en, and might make a tasty addition to your picnic spread.

CANDIED APPLES

5 apples 2 cups syrup
 ¼ cup shredded coconut

Select firm, sweet apples or any other kind which will not break in small pieces when cooked. Heat the syrup to the boiling point, and add the apples cut in eighths or in circles. Cook very slowly until tender. Cool slightly, drain completely in strainer or on a fork, and roll or dip in shredded coconut. Any syrup such as cane, corn, or maple and honey may be used in this recipe.

SPICED OATMEAL CAKES

1½ cups flour ½ cup cooked oatmeal
¼ cup sugar ¼ cup raisins
¼ teaspoon soda ½ teaspoon baking powder
½ teaspoon cinnamon 3 tablespoons fat
¼ cupful of molasses

Heat the molasses and fat to boiling. Mix with all the other materials. Bake in muffin pans for thirty minutes. This makes twelve cakes.

NOTE: These recipes have been tested by Mrs. Nell B. Nichols in FARM AND FIRESIDE's experimental kitchen.

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that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

ABSORBINE

also other Bunches or Swellings. No blister, no hair gone, and horse kept at work. Economical—only a few drops required at an application. \$2.50 per bottle delivered.

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WE are offering several hundred of the best farms in Ohio at prices that are low in comparison to the value of the property and the income assured purchasers.

These farms are a part of the Miami Conservancy District, which is a political subdivision of the State of Ohio, and represent a surplus acreage that we own in the Miami Valley.

Rich silt loam top-soil deposits make this land very productive—practically inexhaustible.

It is our earnest desire to bring more good farmers to this community, which lies within a thirty mile radius of Dayton. Quick markets are available by rail, interurban and highway.

We Would Like to Send You Booklets Giving Detailed Information. Just Address "Farm Division"

THE MIAMI CONSERVANCY DISTRICT
DAYTON, OHIO



Wizard's Peek was a favorite resort, for it meant the future revealed

Better Farm Babies

I AM very late in sending in my announcement card, but I gave the letters to a friend, forgetting to take out the card, and have just got them back. I want to tell you how anxious I was to get each letter and how much help they were to me. I wonder if you realize how much you are helping the mothers. You surely are doing a great work.

I am sending you a little verse which I read and enjoyed so often while waiting for my baby. It may help to give another the same feeling of happiness it did me:

A partnership with God is motherhood;
What strength, what purity, what self-control,
What love, what wisdom, shall belong to her
Who helps God fashion an immortal soul!

Our boy is surely a Better Baby. He is so good, and has never had a sick day so far. I was so disappointed at having to put him on the bottle after having the influenza, but he is doing fine. He is now six months old and weighs seventeen pounds. I am sending the 50 cents for the letters, and would like to get them all from the time of his birth.

I want to thank you again for the help you have given me and will give in the next letters.
Mrs. H. D., Illinois.

I AM enclosing the card announcing the arrival of our little baby boy, not two weeks ago. I wish to thank you with all my heart for the monthly letters. They were read over and over, and contents carefully noted and directions followed to the letter. I feel confident that the letters helped in a great measure to keep me well and happy; everyone spoke of my perfect health and general happy condition.

The last letter arrived only a few hours before the baby. He is a dear little boy, not very large, but perfectly formed, and we can almost see him grow. My condition has been perfectly normal since his birth; I am beginning to sit up and walk a little now. Baby is fortunate in having a very good nurse, who is still with me, and is helping to

Robert Hickman, a 23½-months-old, of Wakeeney, Kansas, likes chicken-raising

form the right habits so necessary to start my Better Baby. He sleeps well and eats every three hours, and cries very little. I am enclosing the stamps to cover postage, and hope to continue the good work and will look forward to the letters.

Mrs. R. E. C., New Jersey.

YOU will find enclosed the registration card and 50 cents for the next series of letters. I didn't write sooner because I have been so very busy. I want to thank you for all the splendid helps I received from your letters. I am so proud of my darling baby. Both baby and I are feeling fine, and able to go out of doors again. I still want your advice from time to time, so that I will surely have a Better Baby.

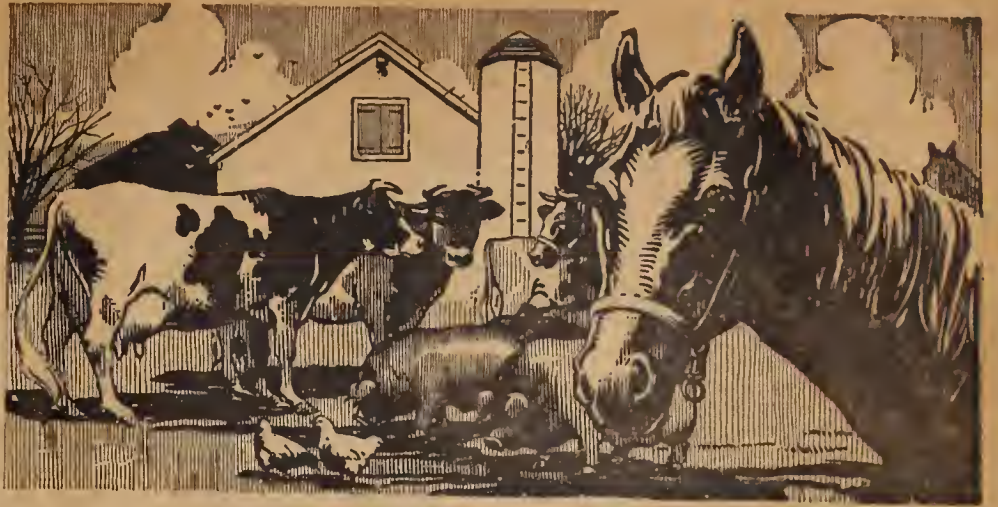
It was hard for me to wash him at first, but I am getting used to it though, and enjoy it so much. I hope to hear from you soon.

Mrs. J. P. J., Michigan.

LITTLE Dorothy came with the roses and she is the sweetest rosebud of them all. The doctor and nurse pronounced her physically perfect, and she gives every evidence of being a Better Baby.

I am enclosing 50 cents for membership in the Mothers' Club. If I receive one half as much help from the monthly letters as I have from the Expectant Mothers' Circle I shall feel repaid. The letters have been so friendly, cheery, and full of things that I needed so much to know.

Of course, I wish to keep in touch with you, and feel the need of your advice in bringing up the little cherub which has been entrusted to our care. I'll probably have a great many new perplexities in the next twelve months which the Mothers' Club will answer for me.
Mrs. L. W., Ohio.



Relieves their pains, too!

It is not only dangerous but cruel to neglect painful lameness, bruises and swellings, when you can have right at hand, that old standby Sloan's, "the World's" Liniment. For 39 years, Sloan's has been the standard for animals. It does its work surely and *without bandaging*. Buy the large 18 ounce bottle and keep it handy. \$1.40. It's cheaper in the long run. Other sizes 35c., 70c.

Dr. Earl S. Sloan, Veterinary Surgeon, whose portrait is on every genuine bottle of Sloan's, the World's Liniment, practiced his profession for more than 20 years.



He has a natural love for animals, being a buyer

and owner of live stock. From boyhood he has been able to treat them with rare ability and with great success.

It is 39 years since he first placed Sloan's on the market. Its wonderful power as a pain reliever has saved untold thousands, both man and beast, from suffering. Its use saves you money.

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We've knocked the bottom out of high cost of fence building. We Pay the Freight and save you money. Here's a man that
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Mr. R. D. Dillard, Milton, Okla., writes: "I found all the Fence as good or better than I expected. I saved \$28.65 on my \$75.00 order."

You will never know how much you can save thru our DIRECT FROM FACTORY TO FARM selling plan until you get our free catalog. Write today. KITSELMAN BROS., Dept 271, Muncie, Ind.



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These splendid shoes are made of beautiful black glazed kid finish leather, and are modeled on the most fashionable last. The elegant lines shown in the picture tell the smartness of the style. The fancy stitching also adds a touch of elegance. The soles are medium weight, very comfortable and give splendid wear. The heel is the popular Cuban model. Sizes 2½ to 8.

Think of getting such a shoe as this for only about half the regular value. Just compare with shoes at \$7.50 and \$8.00, and then you will realize what an unparalleled offering this is at our bargain price of only \$3.98. No money. Pay the special price, \$3.98, for the shoes on arrival. Examine them, try them on, and if not as elegant as you expect, if not just what you want, return them and we will refund your money.

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Don't delay. This is a special offering to bring us 5,000 new customers this month, and every pair will quickly go. Send today!

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Send the Ladies' Dress Shoes No. AX909. I will pay \$3.98 for shoes on arrival and examine them carefully. If not satisfied will send them back and you will refund my money.

Name..... Size.....

Address.....

What the Better Babies Bureau Is And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with Fifty Cents in stamps, for postage, and state what month you expect your baby.

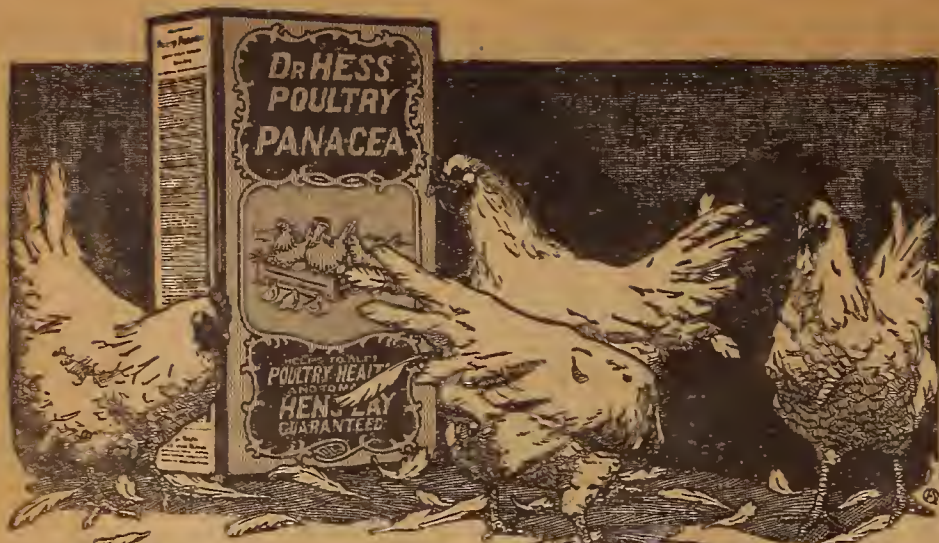
THE MOTHERS' CLUB: Every mother of young children is eligible. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends Fifty Cents in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for Ten Cents. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

BETTER BABIES BUREAU

or to Mrs. Caroline French Benton, Counselor

FARM AND FIRESIDE

381 Fourth Avenue, New York City



Help your Moulters Moults

Moulting time is the time that a hen needs assistance. It is the off-season in the life of the hen.

Think of the amount of a hen's energy, vitality and red blood that's required to reproduce a thousand feathers! (which is only an average plumage).

A moulting hen needs good health, good appetite and digestion. That's just what Poultry Pan-a-ce-a does for a moulting hen—gives her appetite and good digestion, so that she'll eat more and digest more.

Dr. Hess Poultry PAN-A-CE-A

Helps your poultry through the moult. And starts your pullets and moulted hens to laying.

It contains Tonics that produce appetite and good digestion—Tonics that tone up the dormant egg organs—Iron that gives a moulting hen rich, red blood and a red comb. It contains Internal Antiseptics that destroy disease germs that may be lurking in the system.

No disease where Pan-a-ce-a is fed

Pan-a-ce-a helps your poultry to stay at par during the moult. They don't become run-down, pale and thin. That's why a Pan-a-ce-a hen gets back on the egg job quickly instead of sitting around all fall and winter as a bill of expense while regaining her normal vitality.

Always buy Pan-a-ce-a according to the size of your flock. Tell your dealer how many fowls you have. He has a package to suit. Good results guaranteed.

30c, 75c and \$1.50 packages. 25 lb. pail, \$3.00. 100 lb. drum, \$10.00. Except in the far West and Canada.

DR. HESS & CLARK

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Dr. Hess Stock Tonic keeps hogs healthy, drives out worms.

Dr. Hess Instant Louse Killer Kills Lice

FERRIS WHITE LEGHORNS

Leading American strain for 20 years. Winners at largest fairs. Pedigreed, trapnested; records 200 to 307 eggs per year. Special fall prices this month on 1,200 early cockerels, 5,000 ready to lay pullets and 2,000 yearling hens. We ship C. O. D. and on approval. Big free catalog gives prices and full particulars. Write today.

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Comfort and Pleasure This Winter

CLEARWATER ON CLEARWATER HARBOR AND GULF OF MEXICO. Wonderful surroundings, surf bathing, mild climate, comfortable accommodations, hotels and cottages. Citrus groves, trucking, chickens and dairying. Good land, sufficient rain, luxuriant growth. Write

BOARD OF TRADE, Clearwater, Fla.



Read These Letters

My old stump land now pays me \$125 per acre in cotton—and my corn is great, many ears 11 inches around. My One Man Kirstin Outfit pulled 28-inch red pine stumps. Also a 30x40 ft. store house to the astonishment of all present.—H. J. Thompson, Appleton, Ark.

Have tried the One Man Kirstin Stump Puller and it works fine. My little boy, 10 years old, can pull a good size tree with it.—F. G. Pyle, Aberdeen, Md.

My pine stumps are solid in the ground, and average about one and a half to four feet across the top, but the LITTLE KIRSTIN takes them all out fine.—Mr. E. J. Stoltz, Washburn, Wis.

Quick Shipments from Escanaba, Mich. Atlanta, Ga. Portland, Ore. Soo, Canada

World's Largest Makers of Stump Pullers!

Try This Stump Puller FREE 30 Days

Try It 30 Days FREE!

No horses or extra help required. No digging, chopping or other expense. One average size man alone handles biggest stumps—quick!—easy!—cheap! Saves labor, time, money! Pulls big, little, green, rotten, low-cut, tap-rooted stumps, trees or brush—any kind! I send puller without a single penny in advance to prove it! If not pleased return at my expense. You don't risk a penny. Four easy ways to pay.

Kirstin ONE MAN STUMP PULLER

Weights less—costs less. Has greater speed, strength and power. Lasts longer! With scientific Kirstin leverage principle a few pounds pull or push on handle exerts tons on stump!

My Big New Book on Stump Pullers FREE!

Tells how to pull stubborn stumps in a few minutes at low cost. Shows how the Kirstin clears acre from one anchor! Low speed to start stump—high to tie it out quick! Patented quick "take up" for slack cable. Easily moved around field. Read the book—the 2-year GUARANTEE AGAINST BREAKAGE—Four Easy Ways to Pay—and Special Agent's Proposition. Shipment from nearest distributing point saves time and freight. Write today! Address: A. J. KIRSTIN COMPANY, ESCANABA, MICHIGAN, 3209 Lud Street 20A



One Man Alone Handles Biggest Stumps! Thousands of Kirstins Now in Use!

Single! Double! Triple Power!



Can You Add These Nuggets to Your Own Household Mine?

I WAS so thankful when I found out that tin cans would really burn. We fill them with soft coal and place them in the fire box in the kitchen stove, or in the furnace. It takes a can about two hours to burn up, and since it is red hot most of this time it creates an intense heat. Even if they were of no value for throwing off heat, it is a relief to know we can thus get rid of them.

Mrs. P. H. W., Illinois.

When looking for a particular saucepan cover, the average housewife has to upset a whole shelf before the right cover is found. A very convenient way to keep



them is to have a small rack on the inside of the kitchen cupboard door. The best arrangement is to have three laths, one foot apart, screwed to the inside of the door in a horizontal position. Under each end of the laths a small block, about one inch square and one inch thick, should be put

so as to allow for a one inch space between the lath and the door. The covers when dropped into the racks will take up very little space, and any special one can be selected at a glance. E. N., Canada.

Last night when my small son returned from school with a sprained ankle I wondered what to do, as my hot-water bottle, like the Irishman's cistern, had a "lake" in it. I dried the bottle thoroughly, melted a piece of common fruit jar rubber and mended the hole. It held water all night, and is apparently as good as ever. I cannot vouch for the permanency of this mend, but it certainly served in an emergency.

Mrs. P. H. W., Illinois.

Last winter we had a hard time trying to keep brown sugar from becoming hard. Sometimes when we would leave it in a paper sack over night it would be so solid that it was necessary to scrape it with a knife or melt it with warm water. At last I made up my mind to keep it where no air would get at it, so I just used ordinary fruit jars and sealed them tight. We had

no more trouble to keep our brown sugar moist.

Mrs. A. D., Michigan.

With the price of paper steadily advancing, I began saving all the circular letters which came into the house, most of which are blank on one side. By cutting the envelopes open the children could use the clean side of them and the letters for arithmetic and their compositions, as they usually want to write them once or twice before they are satisfied. When ready for the teacher's approval they could copy on their good notebooks. This has saved a great deal of good notebook paper in my large family.

Mrs. W. L. G., Illinois.

My husband's old raincoat hung for a long time in the hall closet taking up needed room. It was too worn about the shoulders to serve its original purpose, and yet too good for the junk man. One rainy day, armed with a pair of shears, I decided to do something with that raincoat.

From the back I cut an apron. The edges were bound with tape, and sewing tape was used for strings. This waterproof apron serves many uses. I put it on for washing dishes, watering the garden, and even slip it on under my Turkish-towel apron when I bathe the baby.

From one side front of the raincoat I cut a piece to fit the bottom of my sink, rounding off the corners. This fake bottom has saved me much broken glassware, and even my most delicate china may be washed in the sink with this protection.

The other front I made into a garden pillow, which I stuffed with excelsior. Using this to kneel upon I can dig among my plants without fear of dampness.

Then the sleeves, after the worn parts were carefully trimmed off, the edges hemmed and run with elastic, made me a pair of water-proof slip-over cuffs which have proved indispensable in my house-work.

There were several odd pieces left, which made splendid play aprons for "Junior." My young sister saw them, and insisted upon stenciling blue ducks and red berries on the tan background. These decorations added much to their attractiveness.

Mrs. K. W. S., New York.

ant the...
lighted by a...
ed fortune te...
tal ball, and...
the fortune...

Towel With Tatted Edge

THIS edge is made of No. 15 crochet cotton. Fill shuttle but do not break thread.

*Ring: Two double stitch, picot, two double stitch, picot, two double stitch, picot, three double stitch, picot, two double stitch, picot, two double stitch, picot, two double stitch, close. Turn.

Chain: Three double stitch, picot, eight double stitch, picot, five double stitch, turn.

Ring: Four double stitch, join to third picot of first ring, four double stitch, picot, four double stitch, picot, four double stitch, close, turn.

Chain: Five double stitch, picot, five double stitch.

Ring: Four double stitch, join to last picot of last ring made. Four double stitch, picot, four double stitch, picot, four double stitch, close, turn.

Chain: Two double stitch, picot, two double stitch, picot, two double stitch, picot, two double stitch, picot, two double stitch, picot, two double stitch, turn.

Ring: Four double stitch, picot, four double stitch, picot, four double stitch, picot, four double stitch, close, turn.

Chain: Five double stitch, join to opposite picot in chain. Five double stitch.

Ring: Four double stitch, join to last picot of last ring made. Four double stitch, picot, four double stitch, picot, four double stitch, close. Turn.

Chain: Five double stitch, join to opposite picot in chain. Eight double stitch, picot, three double stitch, turn.

Repeat from * for length desired.

This finishes the design. Each pattern is joined to previous one in second picot of opposite ring, facing one you are making.

MRS. CORA HELWIG.

undwork Earned Me My Liv-
ing, But Headwork Got
Me My Farm

[CONTINUED FROM PAGE 11]

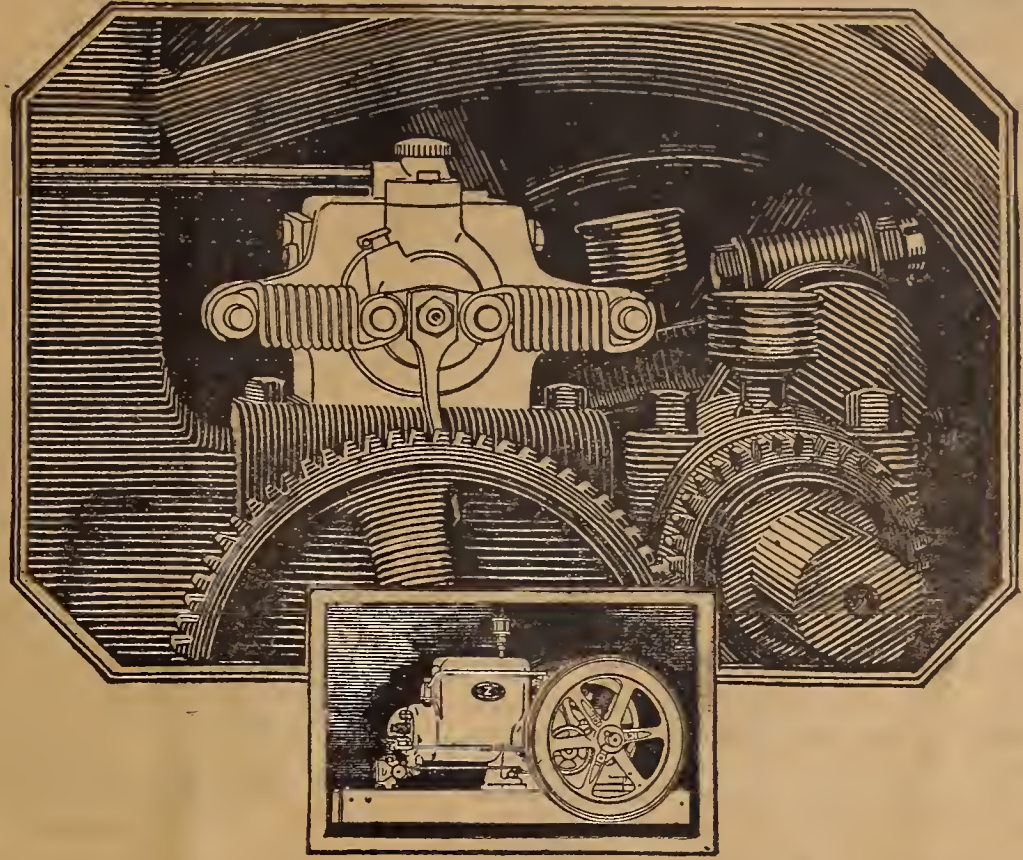
th of business for every dollar spent, I
t spend anything. I do not hold any
lic sales, because my mail and personal
iness is sufficient to take all of the stock
re to sell, and more than I dare let go,
ause the men won't leave until I sell
n something.
followed the same plan with the cattle.
ad stuff which had Oxford blood in it,
since this is a straight Island-bred
ily the prices are much better than
estic-bred cattle. I bought bulls of
t family at small prices, but they were
antly related to Gamboges Knight, the
t butter bull, who was perhaps the
ttest Jersey sire. I knew if I was to get
her ahead with my cattle I must have
ood bull, one related to Gamboges
ght, but the price I knew would be
r steep.
o, instead of going out and paying a
thousand for one of his sons, I resorted
he herdbOOK, and looked into his pedi-
. They say that the best son of a great
is even better than the sire, so I found
Oxford You'll Do was his best son.
i looking up his record I found that he
sired Oxford Will Do, his first son, and
this bull had been bought when a calf
F. Boyd, of Rushville, Indiana, right
me. At this time the bull was four
s old.
xford Will Do had done nothing spec-
lar, but I figured he had the breeding
h would help my herd, so I went over
bought him for a few hundred dollars.
his time his female calves were coming
g in good shape, and showing signs of
lucing good records later on.
ARDLY got the bull home when word
om the Island told of how Oxford You'll
s daughters were making records. One
is daughters, as a four-year-old, had
finished a test wherein she made 946
nds. This boosted the stock of this
ily many points, and everyone wanted
d of old Gamboges Knight.
advertised the fact that I had this bull,
it surely brought me customers and
me better prices. I used Oxford Will
for five years, and then sold him for
00 to Horace Lamar of Liberty, one of
neighbors.
uring the time I had this bull he easily
eased the price of the stuff I sold an
age of \$200. I found it an easy matter
et \$500 for yearling heifers sired by
He is the sire of Plymouth Will Do,
present herd leader. My bull is out of
ughter of Plymouth Lad, the Jersey
which sold at \$9,000, and has proved
self to be a very good sire. He is now
years old, but I did not put him at the
l of the herd until I had given him a
ough testing.
may have succeeded a little in this
e of farming that we play, but I have
for my success with patience, plan-
and work, as any man must.

You Want a Movie Outfit

[CONTINUED FROM PAGE 10]

olied by the extension department of
various state colleges can usually be ob-
ed by paying transportation charges.
is obtained from a regular bureau cost
rding to the nature and length of the
but rates are very reasonable, less in
than motion-picture theatres pay for
same films.
if you want to "pep up" your
try school or church, or increase the
ndance at your farm-bureau or grange
tings, you can't pick a better way than
vest in a motion-picture outfit. You
probably be surprised at the fun you
have, and the results you get will make
investment a highly profitable one.
UTOR'S NOTE. If you are thinking of
ng a motion-picture machine for your
nunity, and want to know more about
to go about it, write to FARM AND FIRE-
381 Fourth Avenue, New York City,
state your wants fully.
Profiteers
PROFITEERING means taking all
u can get and giving as little as pos-
sible, how about the man who neglects his
lings, who refuses to fertilize his fields,
who cuts his woodlot without making
vision for the future?

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No Blocks
No Bale Ties
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Self-Threader
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Threader Press Co., 1443 Oitawa St., Leavenworth, Kan.



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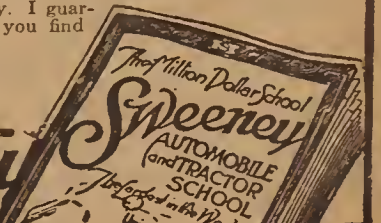
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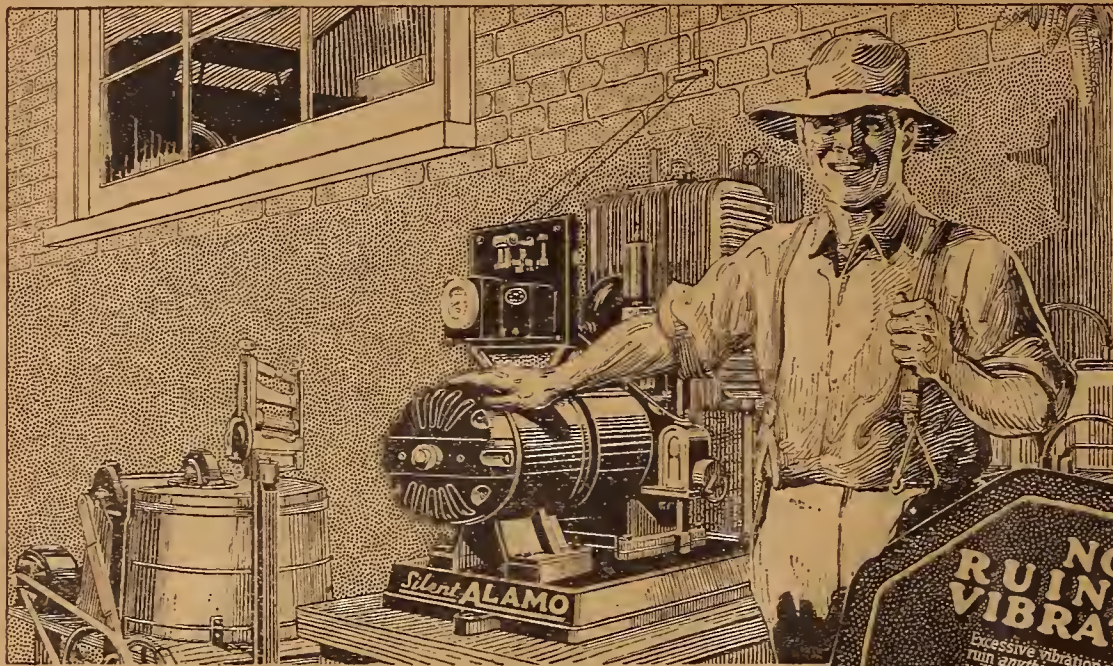
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President

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LIGHT and POWER for the FARM



"I would rather give up my car and keep the Silent Alamo"

On thousands of farms the Silent Alamo has become absolutely indispensable. The comfort of having safe, brilliant electric light everywhere; running water in the house and for the stock; power to operate the churn, separator, washing machine, sewing machine, electric iron, etc., etc., is such a supreme joy that almost anything else would be sacrificed.

Mr. Bipes of Brownston, Minn., puts it this way. He says: "I can, on the strength of my actual experience, recommend the Silent Alamo as the best of all farm light plants today. I would rather give up my car, and keep the Silent Alamo, realizing the many more advantages derived from it."

The "No Ruinous Vibration" Guarantee Look for the tag on every genuine Silent Alamo

The wonderful efficiency and reliability of the Silent Alamo is largely due to the total absence of excessive vibration—the most ruthless enemy of mechanical things. All that terrible jarring and rattling and banging is gone. Read the "No Ruinous Vibration" tag at your dealer's. It is attached to each Silent Alamo. It tells the whole story.

The Silent Alamo is mechanically so perfectly designed that it will operate efficiently without being anchored to a special foundation. Starts at the press of a button. Delivers a tapered charge to the batteries. Motor automatically stops when batteries are full. Motor automatically stops when oil gets too low—also when water gets too low.

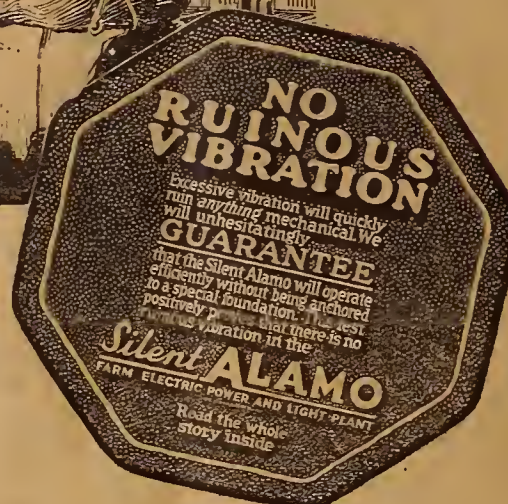
Practically impossible to overheat or burn out a bearing. All parts fully enclosed. Has famous Ide Super-Silent Motor (Rotating Sleeve Valve). Write us for the Silent Alamo book, also for complete data on "No Ruinous Vibration" and what it means. Write today. In the meantime, visit the local Silent Alamo dealer.

ALAMO FARM LIGHT CO., General Offices, 735 Tower Bldg., CHICAGO
Plant at Hillsdale, Michigan

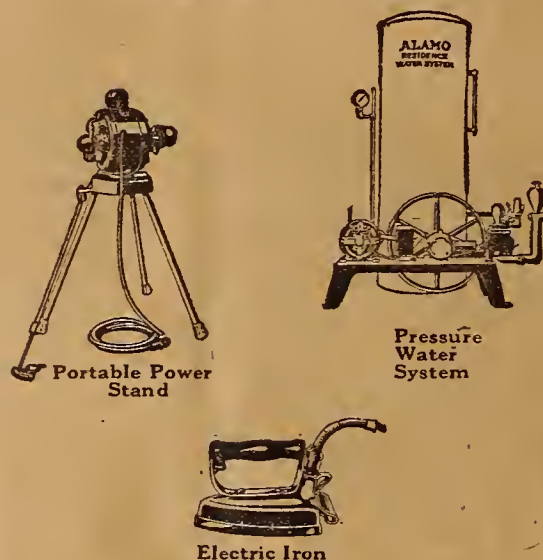
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This "No Ruinous Vibration" Guaranty is attached to each Silent Alamo plant. It is the most important guaranty ever written on a lighting plant.



Electrical Accessories

Any Silent Alamo dealer can take your order for the accessories illustrated here, and many others. See dealer or write us for a complete list of Silent Alamo electrical conveniences or for any special device you want.

(75)

How the "Whiteface" Came to America

(CONTINUED ON PAGE 20)

The fight was on. The Hereford breeders made every use of showyard and tucky, the Shorthorn stronghold, was vaded by a trainload of show Hereford. The Hereford men sent their bulls to range. There they gave extraordinary account of themselves as rustler rangers. The Whiteface became more numerous in the Chicago stocky even as the "Texas Longhorns" be less frequent.

The big ranchers from the Far would come into the Kansas City Chicago stockyards with trainload white-faced cattle. They wanted to more Hereford bulls to sire more white-faced steers. Thus in the vicinity of cago and Kansas City many Here breeding farms grew up. There the race could bring a whole carload of bulls catch the night train home. The Here had won its ground by sheer force of making merit. To-day the breed is second in number only to the Short and in some sections holds undisputed sway.

ONE reason for the steady progress the Hereford has been the fact that has kept singularly free from fads and fancies. Such "families" as there are Herefords take their names from famous bulls from which they sprang. Thus you hear of the Anxieties, Anxiety 4th, brought over from England by Gudgeon & Simpson because he wanted "a bull with an end," so to improve the hind quarters), the Donalds, the Disturbers, the Prime the Perfection-Fairfaxes, the Repet the Gay Lads, the Prince Ruperts Woodfords, the Beau Mischief, the Blanchards, the Bonnie Braes, the Comforts, and so on.

The highest priced one of them was Richard Fairfax, for which Ferguson I Canby, Minnesota, paid L. A. Pin Wessington Springs, South Dakota, \$600. His sons and grandsons are all known as the Richard Fairfaxes.

The Hereford makes no claim to special propensities, though the white-faced cow is a good mother. These things the Hereford claims: Scale (2,200-pound bulls and 1,200-pound cows being common), superior ing and rustling abilities, health and hardiness, early maturity, prepotency. Whiteface always shows up no matter what sort of mixture Hereford blood is subjected, prolificacy and longevity, economy in making prime beef.

There must be a deal of worth wrapped in the white-trimmed robe of red to have pushed the Longhorn from the range and have put white-faced steers in feed lots over the corn belt, to have peopled white-faced cattle the boll-weevil infested plantations of the South, and to have edged the familiar Whiteface to the ro green landscapes from the Blue Ridge Mt. Penobscot and beyond. What ever made a mistake by tying himself to a cow's tail, especially if she was a good one with a white face?

NOTE: This is the second of a series of articles by Mr. Lewis that will comprise a "Folk's History of the Breeds." The third will appear in an early issue. THE EDITOR

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3 horses, 8 cows, 100 hens, all machinery, 8 acres cabbage, 3 acres potatoes, 16 acres grain, large amount of alfalfa hay, Basement barn 36x60, tool shed, 10 room house in good shape. Coughlin's Farm Clearing House A high producing farm equipped for only \$7,000 on easy terms. Send for our lists. Largest in New York State 121 S. Warren St., Syracuse, N. Y.

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The Useful Member

MY COW, she never went to school. To learn to be a mother: "Eugenics" ain't the same to her. It may be to another.

My cow she never read a book. To learn to care for babies: Doc Holt don't mean the same to her. That he does to the ladies.

And birth control? Don't make her laugh! She brings her yearly treasure And lays it at her master's feet. A full and dripping measure.

My cow, she ain't just up on style. Just keeps her cud and chews it. And feeds twelve cherubs every day. Whose mothers couldn't do it.

—Grace E. Purse, "Rural Spirit"

Alsike Beats Red Clover

THE use of alsike clover as a substitute for the common red clover is gaining headway in Ohio, according to the Ohio Experiment Station. This is due to the fact that the alsike clover produces favorable yields in soils where lime is deficient and underdrainage is lacking.

Alsike clover is also resistant to antracnose and root-rot diseases, which are causing loss in sections where red clover is grown.

Alsike seed also costs less than red clover, and the seeds, being much smaller, cover as much ground when sown at one half of the red clover rate per acre.

A favorite plan of farmers in Ohio is to mix alsike with red clover, particularly where some legume is needed for soil-improvement purposes. Where red clover is reliable it is preferable to alsike because the alsike produces seed in the first or hay crop, and then dies, whereas the red clover occupies the land throughout the season.

Saving Young Trees



Banking young trees in this manner will insure them against freezing

EVERY winter sees a good many peach trees killed. Some loss comes from hard winters, some from mice girdling the trunks, and some from borers entering the tree trunks. Banking a young peach tree is one of the best ways I know of to prevent these troubles. It is a cheap and simple preventative. The picture shows how the work is done.

Mice like to work in grass or weeds. If the grass and weeds happen to be close to our peach tree, they will eat the bark during winter. Dirt for banking should be free from this material.

Make the mound six or eight inches high, cone-shaped, with the little tree trunk as the apex. Tramp it a little to keep the dirt from blowing or washing away. When there were a number of trees to mound we have used a one-horse plow to make a furrow on each side of the trees. It must be shallow, of course, because the roots are close to the surface and can be injured. This furrow can easily be stepped into a mound, and much labor saved.

This work should be done before the ground freezes. The later it can be done the better the mound will be, as the snow and freezing hold it from washing down. This banking also prevents the swaying of the tree in the hard winter winds. Keeping the roots firmly set seems to give a young tree a big advantage. The mound also prevents the work of the peach borer.

Farmer's Co-operation Pays

AT THE sixth annual meeting of the United Farmers' Co-operative Society, held recently in Toronto, the reports showed that the totalsales in 1919 amounted to \$8,500,000, a phenomenal increase since 1914, in which year the sales aggregated in value only \$33,000. The opening of the livestock department at the Union Stockyards, Toronto, opened a new and very important field. During the eight and one-half months that this department was in operation, 3,000 carloads of live-stock were marketed for almost \$6,500,000. The co-operative trading department operates in eight cities and towns in Ontario.

The Apple of Your Eye

Country boys are ripening into manhood over all the hills and dales of America. Some of them are destined for city careers. Others will go a-wandering after vanishing rainbows or grow up to be the tumble-downs of tomorrow. But most of these sons of today will be the successful farmers of the future.

What ambition guides the boy who is the apple of your eye? Nothing in life is more important than the training of your sons. If the boy is temperamentally fitted for the city, let him go, but if he has a bent toward farming be sure that he has every chance to find it out, lest the rainbow tempt him away.

Do not fail to give him a personal interest in the farm life about him as he grows up. Nothing so thrills a boy as ownership—possession—partnership. Entrust him with modern, labor-saving machines. Put a plot of ground or some live stock in his care and see how keenly he responds. To neglect him is to commit a sad error.

But there is one course worse than neglecting him, and that is to "give" the boy something; let him glow with an owner's pride over it until it is ready to market—and then keep the proceeds. No father can afford such double dealing with his son. Many a lad has lost his faith in the farm in just this way.

To bring the boy up with a love and admiration for farming is a serious matter. It is man's work and woman's work, and it is worth all it costs. Careful, thoughtful planning in the days of boyhood may banish many a heartache from the years to come.

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NO BETTER stable flooring can be used than cement, and perhaps none other as good, when it comes to saving the liquids. In many parts of the country where gravel and sand are readily obtainable cement floors need not be expensive. Often, now, it costs less than timber and plank floor.

Cement floors properly laid are practically everlasting. Plank and timber flooring begins to rot at once. In a few years at best it is down and out and another must be built. A cement floor needn't be more slippery than a first-class lumber floor. Stock of all kinds can be kept on cement with the best of results, if bedding is properly used. The cement floor is colder than a plank floor. But this is a matter of no consequence, particularly as stock should always have plenty of good bedding under them for their comfort and welfare. Don't let anyone tell you that a cement floor is too hard for a horse's feet. It would be hard for a horse to trot on all day, but in a stall he stands still most of the time, and when doing this he cannot tell whether he is on cement, plank, or dirt, if the bedding is sufficient.

I have been using cement floors for twelve years. They are all right in every way, and if they are properly laid and managed no liquids can get away. The bedding will soak it all up. And the liquid is worth more than the solids, pound for pound, on a basis of cost of the same elements in commercial fertilizers. Few new barns are now being built here in southern Illinois without cement floors, and many of the old barns have cement floors going in.

Laying the Cement Floors

"I'll have to hire a mason!" you'll say. No, you won't; do it yourself. The first thing is to put underpinning under the stable sills all around, should there be none now. This will keep out snow and cold wind. And you can lay the cement mortar right against this and make all air-tight.

If the floor is to be put in an old barn, tear out the plank and timber floor and fill with earth up to within three or four inches of the finished surface of floor. This filling must be packed solidly, so no part of it will settle after the floor is finished. If it should settle, the floor will crack. Water is useful to settle the filling. You do not need to put any foundation of stones under the floor. But tile drains around the outside of walls are necessary to prevent water from soaking in. If you want a gutter, dig it out of the earth, say eight inches deep and twenty-four inches wide, level from end to end. The liquid should be absorbed by litter, and not be allowed to run to one end or to drain away.

Before laying the floor, be very particular to have the grade of the floor just right, so that it will drain to the gutter. If you use stanchions, about one and one-half inches fall from the manger to the gutter will be all right. Four and one-half to five feet is about the right length for the floor. Jerseys can manage with four feet of space, but Holsteins will need five feet, or more if they are large.

Your sand must be clean and free from dirt, and it will be better if you use crushed stone instead of gravel. The mixture I use is two parts of gravel or crushed stone to one of sand and one of cement. Mix thoroughly while dry. A good way is to shovel it from one box to another, dropping each shovelful in the middle. If you have one man rake back and forth rapidly as the shovelfuls fall, the work will be perfectly done.

When the dry mixing is complete, add water gradually, mixing with a hoe. Make

it just thin enough so it will pour out of a pail readily, but not rapidly. While the first batch is being used, have hands mixing another. Allow no mortar to set at all before using. Four inches is amply thick for floors under cows and horses, and two inches is sufficient for manger bottoms and feeding alleys. The floor should be even, but not troweled down smooth. The use of

H. S. Ellenberger, of the Vermont station that cold storage might solve the difficulty attending year-round supply, and he proceeded to inaugurate experiments. The results of these experiments were so satisfactory that he felt warranted in announcing them.

Cottage, Neufchatel, and cream cheese made in summer by various methods and

packed in various ways, were placed in cold storage for several months. The cream cheese developed some metallic flavor, but both cottage and Neufchatel, subject to some variation among methods used, came forth in excellent condition. Some of the storage cheese was thawed out and repacked in retail packages, when persons who knew nothing of its history pronounced it "fine," and were unable to tell it from fresh. Cottage cheese made by the pot method seemed to retain flavor a trifle better than samples made by the baker's method. Experience also indicated that only recently made cheese of the best quality, overdry rather than overmoist, should be stored. Cottage cheese of a poor grade at time of storing deteriorated in storage. Tests made at the beginning and end of storage indicated that acid increased little, if any.

It is to be presumed that more extensive experience will discover other important points about the cold storage of these cheeses, but that the main difficulty in the way of making them articles of wide-spread, year-round use in the national diet is at least on the road to elimination seems apparent.

The producer will be able to market profitably much larger quantities of his skim milk, cottage cheese being manufactured in summer for winter use. The consumer will be able to buy cottage cheese the year round, in any quantities he wants at low prices.

J. T. BARTLETT.

Shearing time on a New England farm

a board float and fine gravel in mortar will make a splendid surface that is not slippery.

A form of the desired length, width, and depth is needed for this. Lay the mortar in bottom of gutter, then put form in place, leaving three inches of space on each side of form. These spaces can be filled as you lay the floor, and a walk behind them can be made at the same time.

It is well to shut all wind and sun from the newly laid floor. Sprinkle it freely with water several times a day for ten days or more. As soon as it is set you can walk on it. It is better to dry slowly.

You will soon see the difference in the manure, and you will be just like me—surprised to see how much more manure you have, and how much more good it does when the liquids are saved.

Cold Storage Aids Cottage-Cheese Industry

IN THE United States before the war, cottage cheese was a food of home manufacture and home consumption solely. In a few isolated cases enterprising farm wives retailed it to regular customers in town, but to the great army of consumers it was an unknown article. Then came food administration and department of agriculture propaganda; and creameries and home buttermakers throughout the country began to make cottage cheese, and sell it too, for the product received extensive publicity, and many families which tried it experimentally liked it. Then the cottage-cheese promoters ran into a snag—the establishment of year-round supply and consumption. In winter, there was a scarcity of the product; in the spring and summer, when skim-milk production was seasonably very much heavier, there was something like a glut, and enormous quantities of skim milk were thrown away because it did not pay to make it into cheese.

One of the States where the cottage-cheese campaign received much attention, because of its relation to the principal state industry, was Vermont. It occurred to

Tankage Does the Trick

I AM fully converted to the great feeding value of tankage in raising hogs. When first my attention was directed to it, I made a trial. The rapidity with which a sack disappeared completely scared me out. It seemed like a waste of good money to see a sack quickly disappear, and to hear the pigs squeal lustily for more. I concluded that corn, pasture, and ground feed was more in keeping with such insatiable appetites.

A year or so ago I told a neighbor of my experience. He laughed heartily.

"Give them all they want for a day or two," he advised, "and pretty soon they will become satisfied. After that they will eat moderately, provided you keep it before them all the time. Your pigs will grow twice as fast with tankage as without it."

I followed the neighbor's advice. One of the pigs had eaten their fill they ate moderately thereafter. Pigs thrive remarkably when they have all the tankage they want. Their digestions seem better, their hair is smoother, and they seem to eat much less other food. I am inclined to think, too, that they are less apt to become wormy. Neither do they root as much, my observation is that hogs that have all the tankage they desire will damage the pastures scarcely at all. Sows with pigs are not inclined to chase the chickens.

So convinced am I of the great value of tankage, that I would scarcely attempt to raise hogs without it. Even if it is high in price I find that the good it does far outweighs the cost. It will pay every farmer raising hogs to become acquainted with tankage. Unless I am greatly mistaken, those who try it for a short time will never thereafter attempt to do without it.

E. V. LAUGHLIN, Iowa.

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DAVID BLAIR, National Secretary

DAN BOONE'S RIFLE CLUB

157 West High Street

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Springfield, Ohio



On the Big Grade

[CONTINUED FROM PAGE 16]

Her hair, her smile, her eyes, her voice, her manner, even the clothes she wore, reminded you of a pleasant day and the breeze in the trees and — and — well, just sunshine.

That was why the whole division watched young Duval jealously when his father, the president of the road, sent him to us and told us to teach him the game. And Shirley took to him mighty near as quick as he took to Shirley.

As for Jim Duval himself, I didn't know him as intimately as the dispatcher's daughter, but he looked well put up, every inch a man — tall, slim, pug-nosed, and freckled, yet not homely by a darn sight. One thing I can say for him: he wore his overalls as if they'd been a king's robes. And he didn't mind work.

WHEN Pritchard lost his job, Duval was running a passenger locomotive extra to help haul tonnage on the big grade. His duty was to follow the Limited down every evening and hook up to number seventeen, which waited at Saluda for the Limited to pass. When seventeen had been yanked up the mountain she would come in double-headed to Hastings, where Duval would cut out and wait for orders on freight running extra. The job needed a good engineer, and, so far as I could learn, Duval already displayed sufficient skill to warrant a run of his own.

The morning after the little affair in the superintendent's office I was climbing down from my cab preparatory to a cup of coffee in the lunchroom, when one of the clerks brought me word Bowlson wanted me. I found him as usual in his swivel chair, chewing the stub of his cigar.

"Well, O'Kelley," he began, "what do you think about last night?"

"You mean firing Pritchard?"

"Sure."

"It's not my business to think anything about it!" I snapped, mindful of every chance to score a dig.

"You'll think about any blamed thing I tell you to!" Bowlson roared. "Sit down over there. You're the oldest man we've got. You know men — or pretend to. I'm worried. Pritchard hasn't turned up for his pay this morning. He was fighting drunk last night, and he was mad. He'll be madder now — and more sober. He's going to come back at us probably through Jim. Get me? The girl's safe enough working in the station master's office. But — Jim?"

"Well?"

He made a gesture.

"Jim runs right behind the Limited."

"Do you want me to take his run to-night?"

"N-o; that might look as if we didn't trust him. Try and get track of Pritchard, if you can. Let's see, you'll be back here at five-fifteen. Give the saloons the once over — the ones near the depot — and drop in and see me. Understand, those aren't official orders; I'm just worried. Funny, isn't it — me being worried?"

"Um," I grunted; "I'll wager young Duval is capable of taking care of himself and his job. But maybe —"

WE LOOKED at each other, leaving the thing we both feared unsaid. Then we shook hands, a most unusual proceeding.

Afterward, at the door, I hesitated, caught his eye and dropped mine.

"What the hell are you waiting for?" he yelled.

I went out thoughtfully.

All that day the matter troubled me. Where was Pritchard? What did he intend doing? I wished young Duval had been running freight; I wished his home wasn't so blamed far from the yards and through such a dark section of the city. Vividly remembering the way Shirley had looked at him in the superintendent's office, and, incidentally, the way he had looked

at Shirley, I wished a great many things right then.

Five-fifteen that evening found me threading my way across the network of tracks behind the depot. Once in the street, I lost no time in following Bowlson's instructions, but everywhere bartender and cigaretted loungers answered me likewise:

"Pritchard? Sure, saw him last night. Was stewed for fair. . . . Nope, not since then."

More uneasy than ever, I went back to the station, only to find the superintendent out. Having secured a bite to eat at the lunch counter, it seemed advisable to drop in and pass a few words with young Duval before he took his engine down the mountain. He would probably be in the dispatcher's office getting orders, so thither I went. We met at the door.

"Hello," he grinned. "You're a lucky devil — no night work for yours. Now look at me hauling seventeen up the mountain with a rainstorm in the air!"

"The rainstorm isn't what you've got to worry about."

"What do you mean?" he asked, losing his grin.

"I mean — Pritchard! He hasn't turned up for his pay. More 'an likely he's on the warpath. Watch yourself to-night."

It seemed as if the muscles under Jim Duval's smutty jumper swelled a little. His voice was very low, reminding me somehow of Bowlson in a crisis.

"Thanks, O'Kelley. If Pritchard tries anything dirty — But there, he won't. He's probably drunker than ever right now. So long."

I WATCHED his easy stride down the hall, through the doorway leading to the platform, and a vague sense of impending disaster assailed me. Even when from the dispatcher's office I heard the whistle of his engine, shrieking for yard clearance, my fears for his safety and the safety of everybody on the big grade were not quieted.

I grabbed a seat over by the window which offered a view of the arc-lit fields of tracks and towers, and puffing dummies forever cutting out and making up and bumping box cars to unloading platforms. Many an evening I've sat there, pipe in mouth, ears on the clicking keys, and my eyes half closed.

Have you ever been in a dispatcher's office? It's quite a wonderful place. Here all the gossip of the road filters in between train orders: what's happening at Hastings, who's drunk on the Central Division, the best movie in Hillsborough — in short, every kind of human interest news brewed by a big railroad. It is a sort of clearing house — the heart, you might say, of the division, always active, never asleep, vibrant, pulsing, keenly alive to the least hitch in the carefully oiled machinery of dispatching.

"Pop" Winston, Shirley's father, sat at his desk, a mass of train sheets before him, a green eye shade hiding the upper part of his face. Ranged along the wall were many other desks — some with telegraph instruments muttering metallically, some piled with code messages, orders, lists of rolling stock. Beyond the rail lounged three or four off-duty engineers, among them myself, while now and then a flagman or a conductor sauntered in, exchanged a quip or two with Pop, and went about his business. Over all hung the buzz of voices and the monotonous, unsteady click of the railroad telegraph. It had all soaked into my blood. I loved it. I loved the continual nerve strain which had grayed my hair; I loved the gossip still hot from the wire; I loved Pop Winston, his assistants, Bowlson, every mother's son of 'em, with a passion only a railroad man may comprehend.

Just how long I'd been drowsing there

WINCHESTER

1866

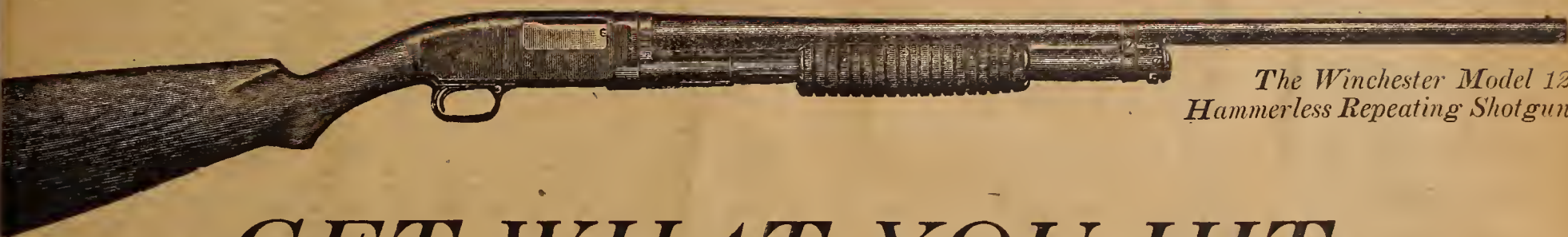
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The Perfect Pattern



The Winchester Model 12
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The Winchester perfect pattern is achieved through *uniformity*, through great care in maintaining perfect balance throughout all details of gun and shell making.

The pattern shown above was made at 35 yards, with 1¼ ounces of *standard* No. 5 shot; 30-inch circle; mallard duck drawn actual size. It was shot with a Winchester Model 12 Repeating Shotgun of standard grade, and an ordinary Winchester Repeater Shell. Shoot a Winchester Model 12 Hammerless Repeating Shotgun. Or if you prefer, a Model 97 with outside hammer.

Be sure you get Winchester Shells—Leader or Repeater smokeless, Nublack or New Rival black powder. Like all Winchester products, they are *balanced* in quality. *Of course they are completely waterproof*, properly made, primed, loaded, wadded and crimped. The only claim we make for them is the *service* you get from them.

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(92C)

I've no means of telling, but suddenly the
chief's voice brought me back to full con-
sciousness with a bump.

"What's that?" he was yelling at an
assistant. "Take that message again!"

We all sensed something wrong; the
room was rather quiet, each ear straining
to catch the wire talk as it came stuttering
in. I too leaned forward. I prided my-
self on my ability to read Morse.

"Engine number seven-o-seven just
passed here running away—Hillsborough."

"Give me the key!" shrieked Pop.
"That's Jim's engine behind the Limited!"

The chief dispatcher crossed the room
at a bound, stretching himself over the
desk like a jockey on a race horse. "Dash
—dash—dash—dot—dot—dot" snapped
the Hillsborough call over and over. There
was a moment of silence. Then, as Pop
threw his switch, "OK—OK—OK" came
in steadily.

"Give me details about runaway,"
clicked the dispatcher.

"Don't know much. Saw seven-o-seven
just pass. Going like hell. Positive no-
body at throttle."

"How far's the Limited ahead?"

"Fifteen minutes."

"God!" muttered the man under the
green eye shade. Then he was at it again,
sending out the Hastings call like a streak
of sound.

"Ditch runaway on siding. Quick!
Will catch express on big grade."

We were at the rail now, pipes forgotten,
sweat on our foreheads. It seemed hours
before the Hastings man answered:

"Nothing doing. Engine went through
as you opened up. Try Spartan."

Spartan was the last siding before the
track dropped off down the mountain—
just a flag station, a water tower, and a
telegraph office. If only the operator were
there! My finger nails bit into the banis-
ter rail until I felt the blood welling up
under them.

"DASH—dash—dot—dot" clicked Pop
furiously, but there was no answer.
Again and again he sent the call, crashing
down on the key as if the very weight of the
sending must rouse somebody. "Dash—
dash—dot—dot" over and over until our
brains whirled with it and our lips whis-
pered it. Three minutes passed, lengthened
to five. The five became ten. Then, "OK—
OK" crackled out briskly.

The chief, white as the paper lying under
his shaking hands, hardly waited to close
the line. "Ditch runaway," he ordered.
"Ditch—"

"Too late. Tried to. Just gone through.
Limited twenty minutes ahead."

Slowly, covered with sweat, "Pop" stag-
gered up from the desk. "Boys," he whis-
pered hoarsely, "nothing under the sun
can save the Limited! A rear-end collision
on the big grade! God in heaven!"

All my life I had been used to railroad
crises; all my life I had looked forward to
the time of the inevitable mistake which
must send me to my death. I had always
prayed that mistake would not be mine.
I had always hoped somebody else might
be responsible for that last error in the art
of juggling human lives, so that when the
whole blamed thing was over, the debris
cleared away, and the track open again, old
Bowlson might say with one of his diabolical
grins: "Well, O'Kelley played the
game. No kick coming on O'Kelley!"
But now, in spite of the fact I was safe in
the dispatcher's office, the horror of what
might happen to Jim Duval turned me
cold.

I knew how Duval, senior, had set his
heart on his only son, was watching his
strides forward with keen happiness. I
knew anything reflecting on Jim's ability
would be in the nature of a death blow to
him. Pictures flashed before me of young
Duval unconscious on that runaway or lying
crushed at the bottom of some fill; of the
Limited sent tumbling over a cliff by a fol-
lowing engine doing eighty or ninety miles
an hour on a down grade; the screams of
the passengers; the hurry call for hospital
trains; the investigation; the accusing fin-

ger of the press and finally Shirley Winston,
brave to the last, sticking it out beside
Jim, true to his memory even as the public
pointed to his grave and shook its fist—all
this I thought of in the same length of time
it takes to dream a nightmare, which is
really no time at all.

With a sudden flash of intuition, born
perhaps of a brain working overtime, I
thought of a possible solution, an improb-
able harum-scarum method of saving the
Limited.

"Listen!" I cried, trying to make my
voice matter of fact, "There's one way we
haven't considered. You, Pop Winston,
listen to me!"

EVERY eye turned; every face mirroring
despair became intent. The dispatcher,
his gaze feverish, his hands trembling,
looked up.

"God!" he muttered.

I reckon my own face had lost a little
color.

"Number seven-o-seven is a slow engine.
She's running away. She will catch the
Limited on the big grade if she isn't
stopped. There are no more sidings to
ditch her on. Behind her, all the way from
our yards to the mountain is practically
clear track. There may be a freight or two
to be run into the clear, but that's easy.
Well, I'll take my engine, old ninety-nine
—she's the fastest oil burner on the divi-
sion—and there's a chance of my catching
that runaway. A good sporting chance!"

The room had become charged with
silence, explosive, vibrant, broken only by
the persistent click of the keys and the
breathing of men.

"O'Kelley," Pop spoke, his voice husky.
"you know what that would mean? Prob-
ably your death. Suppose you found
seven-o-seven ditched on a curve? Sup-
pose—"

"Shut up supposing! Two lives against
three hundred—I want a fireman."

The dispatcher mopped his face.

"No use; none of 'em would go!"

I turned about. There were a couple of
firemen who were off duty lounging along
the rail.

"Volunteers! Will either of you fire for
me?"

But no voice answered.

A sudden rage filled my veins.

"Look here!" I yelled, "You bunch of
white-livered apologies for men, I want a
fireman. Don't you understand? Don't
you hear me? It's to save the Limited!
It's to save the reputation of the division.
Somebody's got to. We may pull through
all right—"

Only silence greeted me, sullen, shame-
faced refusal. My eyes became blurred;
the blood was pounding at my temples;
my fists aching to strike out, to feel quiv-
ering flesh beneath them. Perhaps I was
a little crazy for a moment—

Then a clear voice from the door cut
through the tension, a woman's voice. We
turned.

Shirley Winston stood there, and she
was speaking to me, ignoring the rest con-
temptuously:

"Mr. O'Kelley, you get ready. Get the
line cleared. I'll find you a fireman in
three minutes. Never fear! In three
minutes!"

BEFORE I could answer she was gone,
flashing off down the hall.

Pop was already at the key, his assis-
tants taking his orders on the jump. I
glanced at my watch and waited. Wire
talk, stutteringly fierce, flew in every direc-
tion. Freights were ordered to sidings,
passenger trains stopped, backed, and
shunted out of the way. The nerve force
of the entire division trembled with sudden
feverish energy—energy which must clear
the line for a race against death.

In precisely four minutes I heard the
shriek of my own locomotive in the yards,
a warning whistle for me to hurry. But
still Pop delayed.

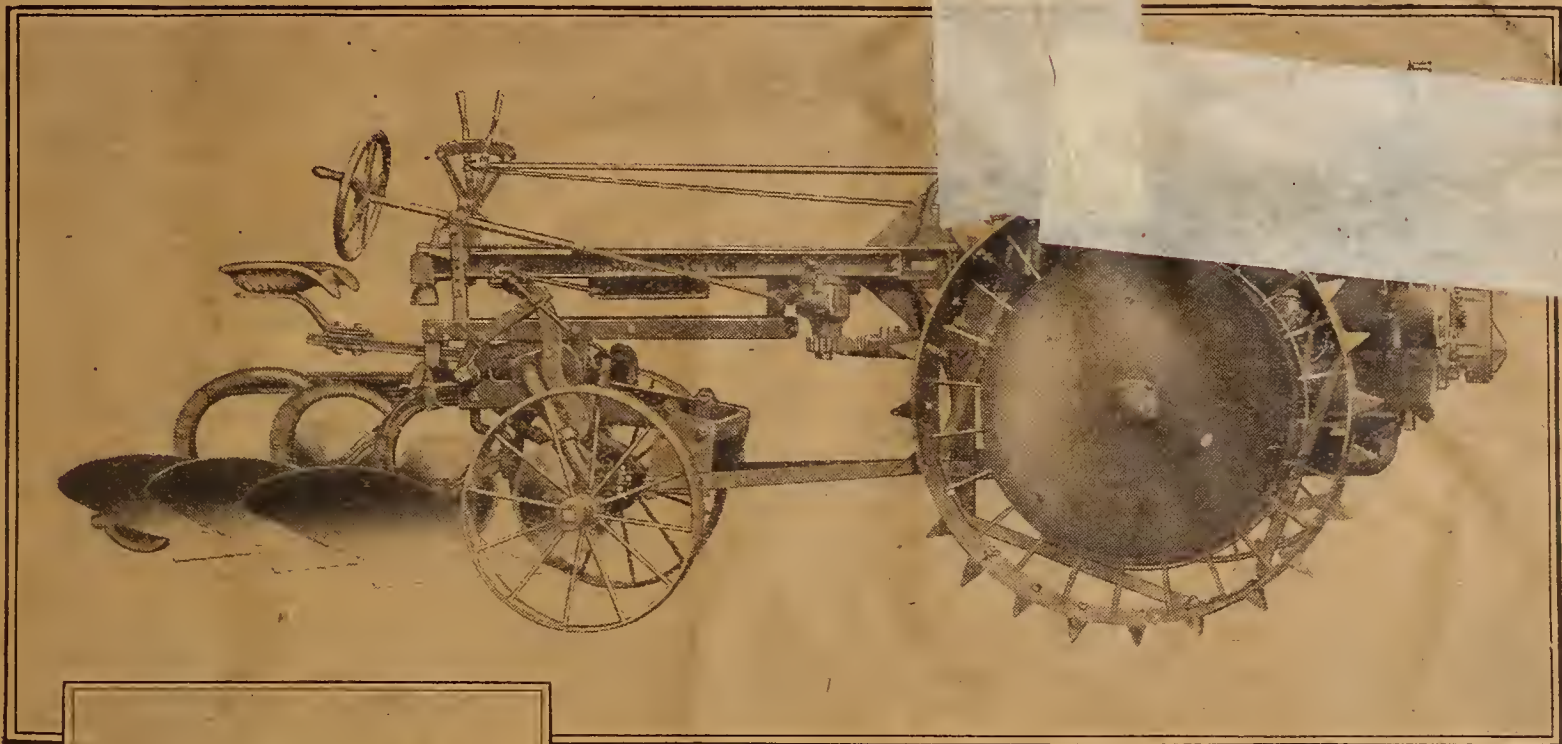
"Just a moment," he begged. "Just a—
There! Now go to it! Number one hun-
dred and thirty-five is clear at Biltmore.
Go to it and—God bless you!"

[TO BE CONCLUDED IN NOVEMBER ISSUE]



MOLINE

The Universal Farm Power Plant



Does It All

It is the correct farm power unit, doing all belt and field work, *including cultivating*, with one man.

3-2 Plow Capacity

- 3 plows for ordinary conditions which prevail in most sections of the country.
- 2 plows for extreme conditions and unfavorable seasons.

The Moline is unique in the tractor field—made so by our patent protection.

An average elimination of 4.7 horses per farm and a total average saving of \$1447.58 per year is reported by Moline Tractor performance records received to date—all made with the 2-bottom plow. Here are three representative reports:

Name and Address	No. horses displaced by tractor	Value of labor saved	Sav the Trac
(Name on request) Pulaski, Tenn.	7	\$150.00	\$161
(Name on request) Spencer, Iowa	5	800.00	199
(Name on request) Ossian, Ind.	4	540.00	1577.50 *

* This is clear profit for the year over the cost of fuel, oil, repairs, depreciation and interest on the investment.

If desired you can use the "drag behind" or horse drawn implements you now have with the Moline the same as with other types of tractors

We will be glad to give anyone interested the opportunity to personally inspect these records.

See Your Moline Dealer or Write Our Nearest Branch at:

- Moline
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New Orleans
- Dallas
Oklahoma City
St. Louis
- Poughkeepsie
Baltimore
Los Angeles
- Indianapolis
Stockton
Spokane
- Portland
Salt Lake City
Columbus, Ohio
- Denver
Kansas City
Omaha
- Minneapolis
Jackson, Mich.
Sioux Falls
- Des Moines
Bloomington, Ill.
Memphis

MOLINE PLOW COMPANY, MOLINE, ILLINOIS

Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

LAST September, in Colorado, while traveling from Buena Vista to Leadville, I stopped at a little white clapboard schoolhouse that snuggled itself among the piñon oaks a few rods from the road. My companion and I slipped into seats at the back of the one-room building, and for over an hour we listened to the recitation of those twenty-seven pupils who ranged from a tiny black-eyed miss of six summers to an overgrown lad of fifteen. At noon we talked to the kindly, gray-haired woman who had been teaching country school in that State for a quarter of a century. She was an enthusiast who loved her work, and because she loved it she did not complain of the long hours in and out of the school-room, or of the salary she received. We learned that she walked two miles to and from school, except during bad weather, when she rode horseback. She did the janitor work at the schoolhouse, and it was a cold lunch she ate every day. In return for her services she was paid a salary of \$70 a month, plus the allowance of \$2.50 a month for janitor's services, for a period of nine months each year. From this she had to pay for her board and room, her clothing, her books, her horse hire, her six weeks every other summer at normal school, not to mention other necessary expenses a human being is required to meet.

The daily round of duties which that Colorado teacher performed is typical of those required from the average country teacher in the United States. Yet the meager salary—in these days of high costs—which she received is more than the average country teacher gets. According to the Department of Interior, which made a recent survey, this average is \$634 per year. Perhaps there are a few teachers who are not worth that much, but the teachers I know are capable and sincere, and that amount of money is not a third of what they are worth. Maybe the most of our teachers are like that teacher in the little white schoolhouse nestling at the foot of the Colorado mountains—doing a labor of love. Unfortunately, love of that sort doesn't buy a great deal of bread or shoes.

"Ham Sniffers"

Did you ever hear of a "ham sniffer"? Well, neither did I until the other day when R. W. S. of Manhattan, Kansas, wrote in to tell us that certain meat inspectors have had that title thrust upon them because they specialize in judging the soundness of curing hams. Here is his letter:

"A 'ham sniffer's' only tools are a long steel trier and his nose. As a ham is laid before him he plunges the sharp-pointed trier through to the knuckle joint, withdraws it, and passes the ham swiftly beneath his nose. When he detects an odor that is not sweet, he throws the meat aside, and if it is not unwholesome it is sold as 'rejected' meat; but if it is tainted it goes to the rendering tank.

"Ham-sniffing" is not a pursuit dangerous to health, as tea tasting is supposed to be, but the 'sniffer' with a cold in his head is about as useful in the packing house as would be a bull in a china shop."

Mice and Freight Rates

"When the cat's away the mice will play" is often true, and one can't help but wonder what a splendid time those mice must have had before there was any cat. To apply this specifically, since the cat in the form of the American Farm Bureau Federation arrived on the scene, the railroads, as mice, are not going to cavort as light-heartedly as before. The case in point is this: Shortly after the wheat crop began to roll to market, President Howard of the Farm Bureau Federation slipped down to Washington to ask the Interstate Commerce Commission for a readjustment of rates on grain from Great Lake points to the East. The cause of the trouble seems to be that since the passage of the La Follette bill, which divorced ship lines from railroad lines, the railroads have fixed a rate from Chicago to New York which puts

FARM AND FIRESIDE
The National Farm Magazine
 George Martin, Editor

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<p>H. H. Kildee, Iowa, <i>Livestock and Dairy</i></p>	<p>Mrs. Nell B. Nichols, Kansas, <i>Household</i></p>	

You are invited to ask questions of any or all of these people in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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the ships out of business so far as the handling of grain on the Great Lakes is concerned. It appears that the railroads have fixed a freight rate of 13.8 cents a bushel from Chicago to New York. But the charge is divided so from Chicago to Buffalo miles—is only 3.8 cents a bushel. It is believed that practically eliminated the shipping lines from Chicago to Buffalo, and it was against this by the railroads that President Howard protested. It is understood that the Commerce Commission promised to do all it could in the readjusting of rates so that it would be possible for the ships to aid in moving grain from the Middle West, and as I write this it seems likely the railroads may act without waiting for the government order.

The Farm Bureau is following the proper course by keeping clear of politics and looking after the best interests of its members. I appreciate now, as never before, what a maiden aunt of mine meant when she said: "I like a good cat—not one that goes snooping about the neighborhood, but one that sticks around and tends to her knitting."

1,400 Per Cent Profit

We hope that the Farm Bureau Federation, with its splendid plans for cooperative marketing of grain and livestock, will not overlook the opportunity to help the vegetable growers. During July and August the New York State Foods and Markets Office found vegetable dealers in New York City taking from 50 to 1,400 per cent profit on the produce they handled. Some farmers sold cabbage at one cent a head and the retail price was seven cents a pound. As one Will Shakespeare might have said, "There's something rotten in vegetable-marketing, and it isn't Denmark cabbage alone." Moreover, we know the New York markets

are not the only ones on which money-fever ticks are living. What do you think or know about it?

A Raisin' Recipe

Not long ago, while browsing through books at a public library, I came across a whole section devoted to the study of child psychology in the training of children. I glanced through several volumes, and encountered a number of theories on how children should be raised, but I'll venture a guess that Mrs. Stella Legg of Monticello, Missouri, knows more about the subject than any of the writers of those books. Here is an extract from her letter which tells how she keeps her boys contented and happy:

"My boys were five and seven years old when their papa died. They are now sixteen and eighteen years old, and for several years we have been running our 160-acre farm alone, which means lots of hard work and little play for the boys—only what we make for ourselves, but we try to have as much of that as possible.

"In the first place, I believe in boys' rights, and try to give them a square deal in everything. I consider an agreement made with my boys just as binding as an agreement made with anyone else. I'd just as soon think of not paying the grocer for a sack of flour as I would of not paying my boy back the fifteen cents I borrowed from him. They recognize the principle of it.

"My boys have been always made to feel that we are full partners in everything. Each boy has his very own horse, cow, calf, and hogs, and when they are sold he gets

the money in his own hands and does what he pleases with it; but 'what he pleases' usually has been talked over, and judgment given before the money comes.

"When there is some good entertainment to attend, I always want the boys to even if they have to quit work a little ear they can work every day, and entertainments come few and far between. I know they are welcome to the car in, and I help them all I can to get ready and finish up the chores myself if necessary.

"Another thing is, I cook the things boys like, and if they should accidentally happen to come to the house about A. M., and I have just taken some fat pies (chocolate or cherry preferred) out of the oven, I am foolish enough over my boys to cut a big slug out of pie and hand it over to hungry boy, to see him grin and enjoy it.

"But I believe the main thing to keep boys happy and contented is to love them and let them know you love them. I would feel that there was something terribly wrong at our house if every night when the boys start up-stairs to bed I didn't call back 'Good-night, Mammy sleep tight!' and first thing in the morning say 'Hello, Mam-mie! How do you feel this morning?'

"Now I know some think that pampering would spoil any boy, but my neighbors if there are any more steady, industrious, happy, stay-at-home boys in this country. They love fun and frolic well as any boys, and are as frisky as colts. I am thankful, indeed, that they are happy and contented at home, and if I can always keep their confidence and loving fellowship I have little fear for their future happiness.

Mrs. Legg doesn't need to read a book of child psychology. More than those sons will cherish the memory of the mother long after the reams of printing how to train children are covered deep in dust. I know, for I had such a mother.

You-and-Me Basis

"The Old Man," as C. F. Seabrook affectionately known among his employees who told his inspiring story in the September issue of FARM AND FIRESIDE, rather a unique method of meeting labor situation. In the current number the little four-sheet paper published at a farm near Bridgeton, New Jersey, following notice appeared:

"WANTED—Some people who are enough to desire a quiet, comfortable home with modern conveniences, in the country and a chance to save money, rather than high wages with dirt, noise, and uncertain employment. The place has nothing to recommend it except good treatment, healthful living, steady position, and opportunity for everybody to work away up in a new and growing business.

"In short, we are looking for anyone (or she) who prefers life and work in the open air, with a home only a few minutes from his work, instead of shorter hours (and long travel back forth!) and high wages (and still his cost of living!) in the city.

"No sulkers or people with too many feelings need apply. Anyone who can get a job from 'So-and-so' any time he wants it had better take it. It is better than this one. Our regular work day is a ten-hour day. However, the work consists in doing whatever the employer feels like asking at any time of the day or night.

"Anyone who can meet the above specifications we invite to join our growing organization, which still has room, not only at the top, but also at the bottom, a halfway up as well. C. F. SEABROOK

Of course, Mr. Seabrook has peculiar conditions to meet, for he is near the great industrial centers. Yet he has gone about it in a businesslike way. Incidentally, he is getting the desirable type of help on his farms. It's funny what a lot of kinks can be straightened out in this world by getting down to a you-and-me basis, isn't it?

George Martin



Little Jack Craig of Marion County, Indiana, was five years old his last birthday. All indications point to the fact that he will surely be a fisherman or a financier when he grows up. Last summer he sold \$50 worth of fishing worms. He dug them out of his mother's garden, and one day when she wasn't looking he dug up the larger part of the onion and radish bed—but he got the worms! He has purchased a Victory bond with his \$50, and intends to have some money by the time he is twenty-one.

Growing up with

COLGATE'S contest!

\$1005⁰⁰ in prizes for girls and boys



Take a photo—win a prize

At least one of the stores in your neighborhood will have a special window display of Colgate's Ribbon Dental Cream. These windows will be ready to photograph October 1st.

Anyone not over seventeen years of age may try for generous money prizes, which will be given for the best photographs of a Colgate display. So, look for a store window with the Colgate pictures and packages in it. The dealer will gladly allow you to take a picture of his window.

Ask an older friend who takes pictures or the

man from whom you buy films to advise you how to photograph windows. Taking pictures through plate glass is a tricky operation and one that you may never have tried before.

115 CASH PRIZES

Enter your photographs in the contest, for which prizes will be awarded as follows:

For the best photograph . . .	\$100
For the 3 next best . . .	\$50 each
For the 10 next best . . .	\$25 each
For the 101 next best . . .	\$5 each

Total \$1005.00

Prizes will be awarded before January 1st, and winners will be announced in an early 1921 issue of this magazine. In case of a tie, each will receive the full value of the prize tied for.

And let parents remember, too, that by encouraging the boys and girls to enter this unique contest, there is not only added zest to Kodaking, but a fresh interest in the importance of brushing the teeth regularly, night and morning. The delicious flavor of Ribbon Dental Cream is an important help in forming the habit for health.

RULES OF THE CONTEST

1. Any boy or girl not over seventeen years old may enter.
2. Photographs must reach Colgate & Co. on or before November 10th. Send photographs to Contest Editor, Colgate & Co., Dept. 89, 199 Fulton St., New York City. They will not be acknowledged, except as in rule No. 7.
3. Photographs must be marked on the back with your name, address and age; endorsement of parent, guardian or teacher that the picture was taken by you; name and address of dealer whose window is photographed.
4. It is understood that any photograph may be published in an advertisement. None will be returned—and all will be judged on the basis of their quality as photographs rather than on the advertising value of the

window display. Of course, from a better window display, a more attractive photograph can be made.

5. The judges will consider:
 - (a) Sharpness and distinctness of the print.
 - (b) The proper angle, so that level surfaces show level and slanting surfaces at their true slant.
 - (c) A general understanding of photography as shown by lighting, tone values, absence of reflections, etc.
6. The Editors of St. Nicholas Magazine have consented to serve as judges.
7. Everyone entering will receive a generous trial tube of

Colgate's Ribbon Dental Cream as an acknowledgment of his or her entry.

8. Not a rule but a number of helpful hints: Look out for reflections in the window. When the opposite side of the street is in shadow, these reflections are less apt to show in the picture. If reflections show, you can sometimes avoid them by changing your position. Have the light behind you—but guard against a reflected glare in the glass. The very best way to take a window is a time exposure at night when the window is lighted. But if your prints still show faults, send them in just the same—their other good qualities may be enough to win you a prize.

Colgate's—the safe dentifrice—is endorsed by more dentists than any other dentifrice

COLGATE & CO., Dept. 89, 199 Fulton St., New York



For President
WARREN G. HARDING



For Vice-President
CALVIN COOLIDGE

A Square Deal for the Farmer

If the farmers of the United States think they have nothing at stake in this election—if they think it is simply a contest between the political "ins" and "outs" and that it makes no particular difference to the farmer which wins—they are making a very great mistake, and are likely to realize it when too late to help themselves.

In some matters of interest to the farmers the two parties agree.

For example, both favor strengthening the rural credits statutes; both recognize the right of farmers to form co-operative associations for the marketing of their crops; both favor extending our foreign markets; both are pledged to the study of producing farm crops.

Now, the matters mentioned are important, but not nearly so important as certain other matters; and in the way they look at these tremendously more important matters we find a radical difference between the Republican and the Democratic parties.

The difference is that if the farmers of the country only understand there will be not the slightest doubt as to which party will support at the polls in November.

The farm voice in government

The Republican Party in its national platform is committed to "practical and adequate farm representation in the appointment of governmental officials and commissions."

Are not farmers entitled to such representation? The Republican party thinks they are.

Under Republican rule, for sixteen years that sturdy and faithful Iowa farmer, "Tama Jim" Wilson, was at the head of the great Department of Agriculture.

What happened when the Democrats came into power?

Why, they turned out "Tama Jim" and put in a university professor who knew nothing about agriculture and gave no evidence of caring anything about it.

Farm interests are vitally affected by the administration of the Federal Reserve banking system; by the Farm Loan system, etc. Should not thoroughly competent men who understand the farmers' needs and who have a sympathetic interest in agriculture be on these boards?

The Republican party thinks they should and says so.

Price fixing and price drives

Both parties were asked to promise to put an end to price-fixing on farm products and to government drives to beat down prices of farm products.

The Democrats refused to make such a pledge. The Republicans agreed and in their national platform are pledged to "put an end to unnecessary

price-fixing and ill-considered efforts arbitrarily to reduce prices of farm products which invariably result to the disadvantage of both producer and consumer."

Do you remember what happened when we got in the war? Do you remember President Wilson's definition of a "just price"? He said:

"By a just price I mean a price which will sustain the industries concerned in a high state of efficiency, provide a living for those who conduct them, enable them to pay good wages, and make possible the expansion of their enterprises," etc.

And then do you remember what happened? Government contracts of all kinds were let on a cost-plus basis. That is, the manufacturer was allowed to figure all of the cost of every-kind which he incurred (and he was not restricted in his expense) and in addition was allowed to figure a handsome percentage on top of all his expense and fix his price to cover everything.

Was the farmer allowed that "just price" which was granted so freely to others? He was not. Prices on some of his products were absolutely fixed, and without investigation of the cost of production.

One prominent member of the Democratic administration when asked about the cost of production of farm crops is reported to have said that this was no time to investigate farm costs of production; that it was the farmer's business to produce and not bother his head about the cost.

Throughout the war the farmer was frantically urged to produce by one crowd, while another crowd was using every device of market manipulation to hold down prices of farm products. Was that fair?

Government drives against farm prices

But, someone will say, we were in war, and the farmer should not complain about what it was necessary to do, even if they didn't do it to others.

Very well. Let us overlook what happened during the war. Let us wipe the slate clean up to the signing of the armistice. Let us consider what has happened to the farmer since the war ended.

The farmer had been urged to produce to the limit and had been assured that even if peace came, all he could grow would sell at profitable prices.

Do you remember the price drive in January, 1919, within three months after the armistice had been signed?

Do you remember the more determined drive in July, 1919, when hogs dropped from \$22.10 on July 15 to \$14.50 on October 15, although pork products to the consumer dropped on an average less than 10%? In June, 1920, hogs were selling at \$5.50 less per hundred than in June, 1919, but retail ham prices were \$3.00 per hundred higher.

As a result of the government drive the producer received less and the consumer paid more. Who benefited?

And do you remember the government drive of the last three months, and what it has done to the prices

of grains and livestock? The respective value of the 1920 fourths of a billion dollars announced that the government the cost of living by dumping of pounds of government prices.

Have you been making cattle and hogs that you in prices?

In July, 1919, No. 2 corn per bushel; in July, 1920, in July, 1919, steers sold in 1920, for \$15.00, a decrease sold in Chicago for \$21.85; decrease of 33%. The decrease in beating down prices of the ment help the consumer?

According to the United States Statistics, the consumer paid 12.4% more for his clothing and lighting. During the products increased 20.9% terial 79%, house furnishing ing to the same authority: creased over 4% in July, 1919

We shall not deal further of incompetent and inefficient You know the story in most

As you think it over, remember ing fact: That the Democratic in power, is committed to policy in dealing with the that it has followed during the asked to promise to stop officials only the speculator and the make such a promise.

In justice to themselves generations to come after United States should put party, which realizes its obligations other classes of citizens, and if the farmer is not given a is going to be wrecked.

Talk to your neighbors about sure that they understand what has in the presidential election

Republican National

Republican National Comm
Auditorium Hotel, Chic

Please send me, free
Senator Harding's Address
problems of the farmer.

Name

Address

FARM & FIRESIDE

The National Farm Magazine

NOVEMBER 1920

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U. S. Department of Agriculture



Are We Blind in One Eye?— See page 5



R Bran Some Way Every Day

ALMOST everywhere today, physicians are prescribing wheat bran as a laxative. Pillsbury's Health Bran is particularly effective, because of its large, coarse, clean flakes — not cooked or "doctored" in any way.

Besides, the special Pillsbury recipes on the Pillsbury package make bran bread, bran muffins and bran cookies that are genuine food treats. Your family will agree to that.

Always buy Pillsbury's Family of Foods—different in kind, but alike in quality. At your grocer's.

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FRICITION CLUTCH! Lever Starts and Stops Saw: Engine Runs On!

Does Work of 10 to 15 Able-bodied Men!

New Balanced Crank Shaft

Easy to Move

Used by the U. S. Navy and in Govt. Schools

Steady Smooth Sure Power At All Times

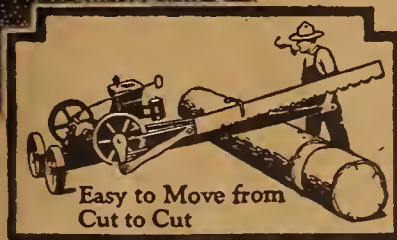
Strictly a One-Man Outfit

310 Saw Cuts a Minute

You Can Saw 35 to 50 Cords a Day with the OTTAWA



Now! Ottawa Ships 'Em Quick!



Thousands of farmers, lumber concerns and loggers are cutting down trees and sawing up logs and branches with this One-Man Power Outfit at low cost of 1½¢ a cord. The OTTAWA does away with all the old time, hard, back-breaking work of cross-cut sawing or lugging logs to a circular saw. Does work of 10 to 15 men.

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Cuts Down Trees—Saws Logs By Power

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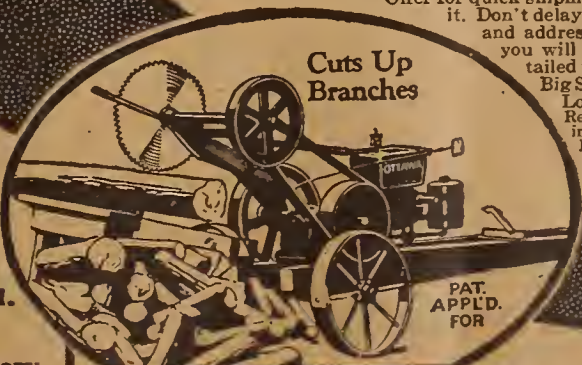
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GOOD WILL TRIUMPHANT UNDER TEST

As this message is being written, Dodge Brothers' daily, weekly and monthly production, is at the highest point in its history.

The most casual sort of inquiry will satisfy you that this production is being absorbed as it is delivered.

Within sight and sound as we write, a great addition to Dodge Brothers' immense works, is being rushed to completion.

The interesting thing about this situation is, that it is not likely that a half a hundred people have ever bought Dodge Brothers Motor Car just because they wanted a motor car.

Of the more than half a million who have bought it—the overwhelming majority did so because of the name it bore.

It has always been treated, by the American people in particular, as an exception—always set apart, and singled out, and never judged by ordinary standards.

It has always been thought of, and is still thought of, first, and foremost, and all the time, only in terms of its goodness, and the results it gives.

All of this is wonderful, in one way, and quite natural and logical in another.

It all dates back to the day when John and Horace Dodge conceived and designed and finally built the car—after warning each other, and their associates, not even to think of it in any other terms than the best obtainable value.

They began with a few almost absurdly simple principles, bluntly expressed and rigidly executed, about decency and honor and integrity—such as most of us wrote in our copy books at school.

They reduced these old copy book maxims to a splendid and scientific system, pouring more, and more, and still more value into the car, and then marshalling all the resources of modern massed manufacture to get their product into the hands of the people at an honorable and an honest cost.

These policies and principles have never been changed, and never will be changed, by so much as a hair's breadth; and they have come to be recognized and accepted as Dodge Brothers principles wherever motor cars are driven.

It has all happened as John and Horace Dodge planned it—quite simply, naturally, and automatically, all over America, and all over the world.

People *do* discriminate, as Dodge Brothers contended they would; people *will* find out when a motor car is well built and gives good service and great good value.

Dodge Brothers market today is where they planned to locate and establish it—in the mind and the heart of every man and woman who admires good work, well done.

It will last, and it will keep on growing, as it has kept on growing for five years (faster than Dodge Brothers works could keep pace with it), as long as the number of those who believe that a manufacturer should build to serve and not merely to sell, continues to increase.

All is well with Dodge Brothers today, because John and Horace Dodge build well in the beginning, and because their business will continue to build well until the end.

DODGE BROTHERS, DETROIT



The Mirage!

Are We Blind in One Eye?

By S. L. Strivings

Vice President American Farm Bureau Federation

IF YOU are one of those unfortunates using the trains, you will understand clearly the serious uncertainties of travel. Sometimes I view it from the optimistic side and wonder how we can travel so safely and so far with so many conveniences. However, when you miss important connections or fail to be at an important engagement because the engine broke down or the sleeper had a hot journal, or any number of other reasons, traceable to overworked or under-repaired equipment, you wonder where it will all end.

Few new coaches or dining cars, or sleeping cars, or freight cars or engines, have been built since the Railroad Administration took over the roads.

Last night I left Buffalo at 8.30 P.M., due to reach Chicago at 8.25 A.M. This morning I am riding through Kalamazoo, Michigan, four hours and fifteen minutes late, with a chance that this loaded train with its heavy equipment will reach Chicago by noon or a little later.

The railroad is back to private control now, but that broken-down sleeper out on the line last night, probably due to neglect, means hundreds of hours' lost time to the crowded train on its way west. Perhaps if one man had cared for that small bit of work by an hour extra time—9 hours instead of 8 perhaps—it might have saved to the nation the equivalent of the labor of a man for 800 hours or 100 days. How fast will we recover national prosperity by such a program?

The other day I rode by a small station in New York called Wheatland, so named because of the rich wheat-producing land all around it. Just within easy sight of the train passing through that splendid agricultural section I counted four vacant houses. Why are these houses deserted in this rich section? Just because the lure of the gypsum mills and factories using the rich lime-

stone strata in which the section abounds has proved stronger than the rich wheat fields which gave the spot its name. With short hours and big pay they outbid the farms, and the wheat fields are outclassed.

The small towns have recognized the value of the factory, and the board of trade or the chamber of commerce is ever alert to find some factory to locate in the town. We are over-factored but underfed. What we need is not more factories, but a better utilization of those we have. We do not need more fields or farms, but more men relieved from useless occupation when the product serves no useful purpose, to the production of the necessities.

The overhead factory costs reflected in this lessened production mean increased costs for the product. Industry is now looking toward Europe for new business. Europe has little money and less credit. She cannot pay for goods without either cash or credit. She might pay for them in either if she had them, but the rate of exchange would make this well nigh impossible. Naturally, the next suggestion is barter, trade—but in what? Not in goods for in these she is short—but agriculture, ever the over-burdened, the over-taxed, comes in as a handy burden bearer, and the proposal is made to open our ports, duty free to the foodstuffs of the world, thus making the American farmer pay for the profits industry seeks in the markets of the world. This means more empty houses among the farms, less foodstuffs at home, more dependence upon the caprice of the old-world food price or the Asiatic lands. In the last analysis the cheapest place to

buy food is at home, but kill that home market and become dependent upon the foreign market, which, though temporarily cheaper, must ultimately cost us more.

For many years we chose wisely to pay more for industrial products made at home than we might have these industries to serve us in times of need and ultimately to give us goods cheaper than we could buy them abroad.

As I write I am passing through Gary, Indiana. Its great mills are not only a national pride and asset, but a national assurance as well. Yet, however valuable they are, we cannot afford to trade the farm for them.

A carefully prepared rural survey of farm conditions in New York prepared by the Farm Management Department of the College of Agriculture at Cornell University shows that 35,000 men left the farms of the State during 1919 for residence elsewhere, and that 11,000 came from the cities and town to the farms, showing a net loss of 24,000 for the year. This is very significant. In this same survey it is carefully estimated that though the cities are overcrowded and housing problems are acute, yet 10 per cent of the dwellings capable of use as a home in the country are vacant.

IN THE Library of Congress at Washington, D. C. as you ascend the second balcony staircase you face that wonderful mosaic by Elihu Veeder—Minerva, the Goddess of Knowledge. In her hand she holds out the scroll upon which she lists the activities of men—an effulgent sun sheds its rays upon it and behind it spreads a rural

landscape, both giving special force to that first word "Agriculture." Though in these luxury-loving days we worship the calf of gold, yet she places "Finance" next to the last and last of all, the "Arts of War." We have worried a lot over fancies connected with fields of war, but we can well afford to stress for a time the arts of peace. We are hearing a lot about the rehabilitation of foreign trade—especially with Europe—always and ever thinking in terms of industrial production. No one seems ever to think that we may have too much in some kinds of production and not enough in others. While shoes are needed and we all want them, yet we doubt the wisdom of all becoming shoemakers. We must have clothing, so some must raise cotton and wool, must weave and spin and dye and cut and shape. We need stockings but we could have too many engaged while we had not enough hats to go around. We need chairs and stoves and tables and dishes and the whole list of things which add to our comfort, but first of all we need food. Is it not possible that production is not properly balanced?

Wages still climb, at least they climb out on the lines of transportation and the end is not in sight. They say it costs so much to live. Well, the high cost of living is not upon the farms. It is probably true that food costs, at least by comparison, a big price, but that big price is not born upon the farms. An 8-ounce package of corn breakfast food costs 15 cents or 30 cents a pound, or \$16.80 a bushel, for corn. Farmers do not get a price like that. Who makes it? A 28-ounce package of wheat breakfast food costs 35 cents, or an equivalent of \$9.60 a bushel. Wheat sells on the farms for \$2.30. A large 3-pound-7-ounce package of rolled oats costs 54 cents, or \$4.08 a bushel for oats sold at probably about [CONTINUED ON PAGE 28]

We Are
SAYS Mr. Strivings in this
Article, because we pay too
much attention to manufactur-
ing and not enough to food pro-
duction.

The Most Wonderful, Useful Thing You Own is Your Imagination

By Joseph E. Wing

I AM going to write this month about the imagination of mankind. It is his imagination that distinguishes man from the brute. It is the power of man to call up images, figures, acts, to foresee consequences, that makes him what he is.

Think for a moment about this word "imagination." It means the power of creating images in the mind; the power of reproducing old images, once stored in the mind; the marvelous power of combining images already stored there; the marvelous and godlike power of creating images there. When one imagines a thing that will come true, or may come true, he has seen a vision, as the old prophet Joel foretold that he would.

To dream dreams is a little different from seeing visions. One dreams idly, sometimes. The pictures come and go through the brain, whether it is sleeping or waking. But to see the *vision* one must be fully awake, he must have in his mind a set of images, a set of memories, if you will. They must be related to each other; they must affect each other; they must produce causes—these causes lead to results, thus there is action and reason and logic in the vision.

All great things come from *first seeing visions*, from *dreaming dreams*, and *believing in them so fervently that one makes them come true*.

Let us look at some examples of visions that men have seen, and the results of them. Once a few men in England were troubled because they were not permitted to worship God as their consciences said they ought, were not permitted to live as their consciences said they ought to live. One of them had a vision of a far-off land, of which he had read—a new, wild land called America.

He went on from this vision to another one. The next vision was of his brethren gathered together at the seaside. A little ship awaited them. They entered, and in the vision he foresaw the voyage across stormy waters, the landing, the settlement amid the rocks and woods, the building of new homes, the making of friends of the Indians, the bringing to them of the story of the Christ; then the founding there of a new nation of God-fearing, fearless, Christian men. It was all a brave vision, and believing in it with all his might this man persuaded his brethren to believe also, so that at last they actually sailed to America, and they landed on the rocky shores of New England, and they founded the State and our nation. Don't you see how essential was the imagination, the power to see visions to the founding of our nation?

Men often laugh at others because they say that they are "visionary" or have "too much imagination." No one can be too visionary, so that he trains his vision aright. No one can have too much imagination, so that he trains or uses his imagination aright. And this also applies to farming—your farming—as well as to anything else.

Nearly all the evil in the world comes from lack of imagination, lack of foreseeing results of acts. Think of this a little. Would any man commit murder if he could, or would, sit down calmly and consider the act that he was about to commit?—if he would think only of the dreadful deed itself, the taking away of that marvelous thing, life, the horror of sending another soul suddenly into death, the terror of contemplating the dead that he had murdered, and then the sorrow that would follow as the dead man's friends mourned his loss, the children maybe left fatherless, the weeping wife, and afterward all the years of repentance, of hopeless shame, and the terror of being always looked upon as an outcast and a murderer? Is there a man in the world who could commit murder if he would first *imagine the consequences*?

I have seen in another country a woman, past middle age, bloated and unwomanly, beyond almost all semblance of womanhood, standing in a saloon and offering drink to a young girl who still bore some of the fragrance of innocence about her. And as I watched them the thought came:

"Great God, can not this lost woman foresee what it is that she is initiating this young girl into? Would she make her one like herself? And the girl, one would think that all she needed for her protection was a trained imagination, an imagination that drew two pictures—the one of a natural girl, a natural woman, clean, intelligent, working, probably, and maybe working hard, but happy in being able to serve somewhere, happy in being clean, in being good, in loving and being loved; and then imagination to show the other picture—the slow but steady progress from inno-

that you can use in making yourself a better, more successful farmer. No great thing was ever built that was not first seen in the mind of the builder. Read the stories of farm successes in this magazine and see how they were planned out first in the farmer's imagination. The vision first,

maybe a clear vision, maybe only a glimpse at first, but an enduring hint, and then a dwelling on that brief vision, a straining of the eyes to see it clearer, at last a clear vision, then the faith and courage to work it into *real being*.

It is told of Michael Angelo that one day while walking in his workroom he stopped and looked intently at a block of marble. For some time he stood there, strangely silent and wrought upon, then

Here are children, boys and girls, young men and young women. They have latent in them all the strength and power and sweetness and possibilities that God could give them. There is no thing that these boys and girls cannot do. There are young men and boys who can some day invent machines that will make life easier and happier for mankind. There may be even young men and boys among us who can make riches and surround themselves and their friends with the fruits of riches. I do not know.

And there are girls here, sweet and pure and good as God knows how to make them, capable of making all the world better by their having lived in it. Some of these girls may also be capable of achieving fame, I do not know, nor do I greatly care, for it is what the woman *is*, more than what she *does*, that counts for happiness and real womanly success.

And there are young men who can build characters—build them strong, build them sweet and kindly, build them clean, build them helpful, build them so beautiful that not all or any of the angels of Michael Angelo would compare with them. These things I have imagined, these things I have seen in visions. Now, if I can only help others form the same visions, if the young man can see himself far ahead, can get clearly the ideal of what he *may* be, of what it is his privilege, his right to be, and work toward that, then will our laughing girls and bright-eyed boys begin to grow into the strong, sweet, courageous men and women that God meant them to be.

We live too lightly, most of us, too much without purpose in the world. We need the awakening that the prophet Joel foretells in his wonderful words:

"And it shall come to pass afterwards that I will pour out my spirit upon all flesh; and your sons and daughters shall prophesy, your old men shall dream dreams, and your young men shall see visions."

After Value of Fertilizer

I HAD heard farmers say that the value of fertilizer for following crops would run from 15 to 50 per cent. I thought then that their figures were way off, but the more I observe the more I think that they were right. In fact, I doubt if the after effect is often as low as 15 per cent.

I have in mind a field of two acres that was planted to onions one year. Complete fertilizer was applied at the rate of 1,000 pounds to the acre. The onion crop was good. The fertilizer evidently paid the first year. The sugar-beet crop that followed was raised without any fertilizer except a little applied directly in the row. This beet crop didn't seem to be so out of the ordinary, but when harvest came the field yielded 20 tons to the acre, while the neighborhood average was closer to 10 tons. If you distribute the fertilizer, cost over two years, the yearly cost will not seem high. But when you consider that in many cases a difference is noticeable in the third and fourth year's crop it lessens still further the cost of the first application.

I also have in mind another field of onions that a neighbor tried as an experiment. He used about 1,200 pounds of fertilizer to the acre. There was perhaps a half-acre all told. About three years afterward I happened to notice his clover-hay crop. One could easily see the outline of the old onion field. This man is now a regular user of fertilizer. I could not tell just the amount of hay increase in this case, but it was considerable, and his oats crop the year before was so heavy that it lodged in that corner. Of course, an onion crop needs more fertilizer than the average farm crop. But the principle is the same with other crops, and you will find liberal applications of commercial fertilizer will pay for several years. EARL ROGERS, Ohio.



When we first looked at this picture, we grinned and said, "Some boy." On closer inspection we gasped and exclaimed, "Some corn!" And finally we decided that Harvey Porch, of Bridgetown, New Jersey, the man who grew them both, and who by the way, also took the picture, must be "some man!" The New Jersey Department of Agriculture must have thought the same. They printed this picture in a booklet which was sent out to show what their State can grow beside mosquitoes. Pretty good sample, don't you think?

cent girlhood into degraded and besotted womanhood and untimely death. Could her imagination be trained, her vision sharpened, what a great armor that would be to lead her into the right paths!

And all through life the trained imagination is a guide and help. It is a mighty restraining force from doing wrong. Young man, before you do that wrong act, stop, look forward, think of the train of consequences, to yourself, to some one else, imagine it all! Picture it out in its true colors! See if you are willing to be responsible for so much sorrow, so much remorse, so much shame as one wrong act may bring into the world! I firmly believe that wrongdoing is more the result of undeveloped imagination than any other one thing.

But there is a constructive side to the imagination, as well—a side that builds things after seeing visions of them, a side

he rushed to his tools and seized hammer and chisel, came to the block of marble, and began chiseling away furiously.

"What is this that has come over you, Michael Angelo, are you gone mad?" his friends asked.

"No; I am not mad," Angelo replied, "but in this stone I have seen the figure of an angel, more beautiful than any the world has ever yet seen. I am in haste to uncover it and let the world see it, even as I see it through the rough stone that now veils it."

Ah, we need more men who can see visions, more women who can see visions, more boys and girls who can see visions. For visions *come true*. There is hardly anything that one can imagine that cannot be made to come true. Let me picture to you what some of my visions are, of what may come from your home and neighborhood:

Did You Sell Your Bull Before He Had a Chance to Prove Himself?

By W. W. Swett

Associate Professor of Dairy Husbandry, University of Missouri



Pontiac Cronus. He had eight daughters to come into milk. Four of them averaged 20,498 pounds of milk and 815 pounds of butter in one year, but he was sent to the butcher before his value was known. Pontiac Cronus has passed on simply because nobody kept him long enough for him to prove his real worth.

heifers, as a foundation for his herd. About five years later several of the daughters of this bull had to be bred, and Mr. Puls did not want to breed them to their sire. Neither did he think it practical to keep two herd bulls, so he sold the bull to the butcher for \$50.

A few months later Mr. Puls commenced making semi-official or yearly tests. Eleven of the daughters of Aaggie Cornucopia Pauline Count 13th averaged 15,047 pounds of milk and 714 pounds of butter in one year, at an average age of three years and

were sold without being tested, and the testing of all his daughters was considerably delayed. The new owner kept him a short time, and traded him back to Mr. Irwin for another bull. Mr. Irwin soon sold him a second time to a party in southern Minnesota, where the bull killed his new owner the first day after his arrival. That was enough. The heirs at once arranged with Mr. Irwin to take him back. Mr. Irwin then sold him to an institution in North Dakota.

At about this time the testing of one or two of his daughters was commenced and, to quote Mr. Moscrip:

"We woke up to the fact that 'Sir Joe,' as we called him, was some bull." As soon as Mr. Moscrip realized the possibilities of this animal, he started out to find him and buy him back. He easily traced him to the North Dakota institution, but found that the bull had been found guilty of chasing one of the inmates of the institution. This break in manners caused the people at the institution to shoot the bull.

It is appropriate to say a few words about the offspring of this bull that did so much for the breed in such a short time. Only sixteen of his daughters had an opportunity to show what they could do. A few of these daughters made themselves famous, but perhaps it is sufficient to mention the one whose performance is known the world over—Spring Brook Bess Burke 2d.

To quote from Mr. M. S. Prescott's article of November 8, 1919, in the "Holstein-Friesian World," Spring Brook Bess Burke 2d is:

"1. The largest dairy cow in the world.
"2. The only cow to have three seven-day records above 35 pounds, each made in conjunction with three yearly records above 1,000 pounds each.

one month. It was a very remarkable performance, and not equaled by many of the best bulls of the breed.

Mr. Puls owns one of the largest and choicest herds of persistently high-producing Holsteins in the State of Wisconsin. He has a herd of about 140 head, and has 29 cows with official yearly records. A large number of the cows are daughters of Aaggie Cornucopia Pauline Count 13th, who may be considered the foundation head of this excellent blood in Mr. Puls's herd.

What would Mr. Puls give to get back this bull? What would this bull be worth to Mr. Puls's herd, to the State of Wisconsin, to the Holstein breed, if he were alive? The reader can make his own estimates. Yet he went to the butcher for \$50.

Possibly one of the greatest bulls that ever came to a tragic death was Sir Johanna Canary DeKol. He was bred by John B. Irwin of Minneapolis, and was selected by W. S. Moscrip of Lake Elmo, Minnesota, because of his splendid type and individuality, and because of the high quality of his near relatives. He was used by Mr. Moscrip until four years of age, when he was traded for a heifer.

About this time several of his daughters

Three of the eight daughters of Pontiac Cronus.—The average production of the three for one year was 22,295 pounds of milk and 885 pounds of butter. The total lifetime production for the three was 409,283 pounds (more than 200 tons) of milk and 16,266 pounds of butter.



Carlotta Pontiac, a daughter of Pontiac Cronus. She has a year's record of 22,593 pounds milk and 885 pounds butter, a three-year average of 21,661 pounds milk and 831 pounds butter, and a lifetime record of 157,896 pounds (almost 80 tons) milk and 6,121 pounds butter. Note udder development and milk-vein system.

If You Jump at Conclusions You May Get Your Head Bumped

THE men Professor Swett tells about in this story lost good money and fine herds because they were impatient and thoughtless. A little deliberation, a little planning, would have put thousands and thousands of dollars into their pockets that now, alas, will never be there. We print their experience, and what they've learned from it, so that you, forewarned, will not jump at conclusions and kill the bull that sires the golden calves.

THE EDITOR.

"3. The only 1,200-pound cow to have a daughter with a 1,000-pound butter record in heifer form.

"4. The only 1,200-pound cow to have a daughter with two heifer records above 800 pounds each.

"5. The only 1,200-pound cow to have a daughter with a 1,000-pound butter record in the ten-months division under the new rules.

"6. Dam of Bess Johanna Crosby who is:
a. The only 40-pound heifer to make a yearly record of 1,000 pounds in heifer form.

b. The only heifer to make 1,000-pound record in the ten-months division under the new ruling."

Not only were the daughters of Sir Johanna Canary DeKol unusual producers, but the same characteristics were handed down to the granddaughters—another indication of excellent breeding qualities. One of his granddaughters has a yearly record of 24,123.1 pounds of milk and 1,136 pounds of butter in a year, and a seven-day record of 35.1 pounds of butter. Another has a seven-day record of 40.71 pounds of butter, giving her a berth with a few famous "forty pounders."

NOT long ago the Holstein-Friesian Association sent out to all breeders a questionnaire to secure a "cow census" of the breed. One of the questions asked was the name of the bull that had made the greatest improvement in the herd. There was only one answer for us at the University of Missouri to make to that question. It was to give the name of Pontiac Cronus, another case of a "bull that died."

Away back in 1902 the dairy department of the university laid its foundation for a Holstein herd by buying four bred heifers. The sum paid for the four was \$600. Three of these young cows dropped heifer calves from their first breeding. Each of these cows proved to be a good producer.

The fourth dropped a bull calf. This cow proved to be an inferior producer, and both cow and calf were sold. The animals remaining were the three original heifers and their three heifer calves. These six animals made up the foundation of the Holstein herd now owned by the University of Missouri. Not a single female has been purchased since the original purchase of 1902. [CONTINUED ON PAGE 22]

TEN THOUSAND DOLLARS is a good deal of money. Yet that is what it cost one farmer I know who sold his bull to the butcher for a few dollars instead of keeping him until his progeny had proved his real worth.

This article is written to tell you the stories of several men who made similar mistakes with their bulls, and to show you how you can avoid such a sad and costly error in your own herd.

There is a strong tendency on the part of many dairymen to select a well-bred bull to stand at the head of the herd, to use him one or two seasons until a good lot of heifers are secured, and then let him go before the value of his progeny is determined.

The only way a dairy bull can prove his worth is through the production of his daughters. How many bulls are ever given this opportunity to prove themselves? Only a few ever live long enough.

It was Peter Small of Chesterland, Ohio, who made the \$10,000 mistake a few years ago. Small had a bull that for some reason or other he decided to sell. He did not sell him to another dairyman, but directly to the butcher. Not long after the bull was killed his daughters began to freshen. They showed that they were going to make unusually good producers, and he kept them. When they were mature they averaged 25,210 pounds of milk and 1,221 pounds of butter in a year. The bull that had sired these cows would have been worth a fortune, but the bull was dead, and Peter Small had no one to blame but himself. But Peter Small did not get discouraged, nor did he try to cover up what he had done; instead, he told the world of his costly blunder.

AT THE 1917 National Dairy Show at Columbus, Ohio, he had five stalls for his exhibit. In each of four stalls stood a big Holstein cow. In the fifth was the black-and-white hide of the bull that had sired these high-producing cows. He called it his \$10,000 hide. Hundreds who attended the show that year took home the lesson of the "four cows and the \$10,000 hide."

Then there was John Puls, owner of the Clover Lawn Farm, Hartford, Wisconsin. About eleven years ago Mr. Puls bought Aaggie Cornucopia Pauline Count 13th with five yearling



Pirates



Photo by G. W. Harting

HERE'S old Barbarossa, pirate of pirates. His first name was Kheyr-Ed-Din. Just look at his bird's-eye maple whiskers. No wonder he was a pirate. He couldn't have been anything else, with a face like that. But before he went pirating with his eagle-headed sword he was a mighty man in Algiers—president or something. He was high admiral of the Turkish fleets in 1537, and died at Constantinople in 1546, having swung a wicked blade all his life.



Photo by G. W. Harting

THIS is old Captain Kidd's house in New York City, about the year 1691. It stood on what is now the corner of Pearl and Hanover streets. The captain never had his picture taken. He was hanged in London in 1701, because, in chasing pirates for the government he turned a bit pirate himself. He buried part of his treasure on Gardiner's Island, New York. Then he came into port and, although denying his guilt, was arrested. He was the son of a Scotch minister, and died feeling greatly abused and vowing that he hadn't done it.



Photo by G. W. Harting

TEUTA was a woman of dash and energy. Under her the Illyrians prospered greatly. The Romans and the Carthaginians divided the commerce of the world between them—until Teuta changed their plans. Several times the Romans sent ambassadors to her, and each time she parried neatly by poisoning the ambassadors and burning the pilots of the ships. At last Rome sent a well-equipped fleet and orders to clean up Illyria—which it did. Teuta asked for mercy, and Rome gave it to her, also a good billet in a prison.



THE pirate trade was once considered an honorable profession. The good Ulysses often augmented his income by skillful buccaneering, and he never lost prestige in his home town on account of it. During the middle ages the Baltic Sea and the Barbary Coast were the best known pirate bases. Later the West India Islands went fifty-fifty on publicity. After the Civil War several privateers kept on free lancing until trade and commerce on the Eastern Coast were fairly crippled. Even as late as the nineteenth century the British sent a fleet against the pirates of the Barbary Coast, who had perpetuated the manners as well as the costumes of their cosmopolitan Spanish, Turkish, and Carthaginian ancestors.

AMONG our well-known sweet-singers of sweet songs was Long John Silver. He was addicted to that touching little ditty entitled "Fifteen Men on a Dead Man's Chest," as you will recall from reading Stevenson's "Treasure Island." As a pirate, Long John and his piratical parrot led all the rest. Crutches are supposed to be used to walk with, but John used his mostly to whale his victims over the head with if they got gay. He didn't do his repenting on the gallows; he reformed.

AND this is Morgan, one of Long John Silver's buccaneering buddies. Even his name denoted his calling. It means "one born on the seashore." Morgan never would have done as a chorus man on Broadway, because he never shaved his legs. He couldn't hold a regular job on account of his appearance. He was just born to be a pirate, that's all. We may be mistaken, but we think it was from Morgan's chest that the druggists got that cute little red design they put on all the poison bottles.



How the International Helped Me to Be a More Successful Farmer

By C. T. Crofton

A FEW years ago, in Chicago, I happened to be one of a group of farmers who were looking over one of the prize steers in the short-fed special class at the International Livestock Exposition. We admired the animal, asked the herdsman about his breeding, and how he was fed and handled—in short, we asked him every question that would give us information on the animal. After our visit, one farmer in the party remarked:

"I have half a dozen steers at home as good as that one."

None of us said anything. However, I thought he might be blowing a bit, for it was a mighty good steer, and the handiwork of more than an average feeder. The next day the steer was put on the auction block, and he sold for \$900. As luck would have it, the farmer who made the remark was standing close to me around the auction ring.

Turning to him after the sale, I said: "Do you think your steers at home will bring \$900 each?"

He looked sort of guilty and replied:

"We are never too old to learn. I am going to wire home to have my two sons come to the International at once."

This man learned something—so I am not alone.

His boys came up to the show next day. I don't know whether they learned anything, for I didn't have time to talk to them; but I will say that if they were anything like their father they went home with a lot of new ideas about the livestock business. I have no sons to bring to the International, but you can bet that if I had they would be on hand every year. If I had had the opportunity to attend the show when I was a boy, I believe I would have been a much better livestock farmer.

In telling you some of the things I have learned at the International Livestock Exposition, which will be held in Chicago from the twenty-seventh of this month to the fourth of December, I want to say that the outstanding feature of the exposition is its educational value.

In the years that I have been going to the show I never yet have come away without learning something new about the livestock business, for I know that the purebred subjects to study there are the cream of the world, and the fat stock, especially in the car-lot division, is the work of our best producers.

What I have learned at the International has saved me lots of money, because it enabled me to buy the right kind of stuff when I started into the purebred cattle game years ago.

After I had been farming for a few years, I decided it would be best for me to get some purebred Angus cattle. It was in the fall of the year that I was about ready to go out and buy some stock, when I realized that the International was only a month or so away, and I had better hold off, since I knew very little about the prevailing type and strains.

I FIGURED that at the show I could talk to breeders, herdsmen, and see the cattle with my own eyes, thus getting a good line on the doddies, so I would be in a position to know something about what I planned to do.

When the show opened I was on hand, and I remained until it closed. Since the rush of farm work was over, it was fairly easy for me to get away, and by sticking to the last I was able to get everything possible out of my vacation.

Before the judging of the Angus cattle started, I roamed through the barns where the breed was quartered, and spent hours talking with herdsmen and breeders. From them I learned what families were most wanted by breeders, and I got a good idea of the different methods of handling a purebred herd.

The question of type, of course, was touched on; but I didn't get all I wanted on this subject from our talks. The men

told me about it; but, being a newcomer, I will confess that I was a bit dense. However, I said nothing, figuring that when the cattle came into the show ring I would learn a whole lot about type, and in the best way—by demonstration.

When the first class of black cattle had assembled in the arena, I had myself a place at the rail which runs around the ring. From this point I could watch every move of the judge, and I never let my eyes leave him. Up and down the class I went with him. True, I could not follow his more experienced eyes, but I was making my own comparisons, and every time he moved an animal up from the bottom to the top, or from the top to the bottom, I tried to figure out for myself just why this was done.

For three or four days I did this, until all of the Angus

This is Mr. Crofton



Why He Goes to the Show Every Year

THE 1920 International will be held at Chicago, November 27th to December 4th. If you go you might pick up an idea that would pay your expenses many times over.

Mr. Crofton, the writer of this article, who is a farmer living near Savanna, Illinois, gives a new angle to what one may gain from a visit to the annual International. To him it is more than a show ring—it's a school for breeders and feeders.

"I believe I would have been a much better livestock farmer," says Mr. Crofton, "if I had had the opportunity to attend the show when I was a boy. In the years that I have been going I never yet have come away without learning something new, for the purebred subjects to study there are the cream of the world, and the fat stock, especially in the car-lot division, is the work of our best producers."

"What I have learned at the International has saved me lots of money, because it

enabled me to buy the right kind of stuff when I started into the purebred cattle game years ago.

"I am a college man, but what I learned at the International was a valuable supplement to my college education. The fact of the matter is that what I saw, put into practice what I had learned at school."

"I believe that if every farm boy were permitted to spend three or four days at the exposition it would be an inspiration and incentive to his intellectual development along agricultural lines. He would have a clearer idea of what better livestock means."

"The army of clubs is increasing because the desire for better livestock is inherent in boys and girls. The desire to grow better things is born in everyone, but some do not develop this asset. I know it is the aim of every boy and girl to have his or her animal enter the International competition and win."

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cattle had been judged. One day I got into the ring, a breeder taking me with him, and I sure got everything I could while I was there. I watched the judging more closely, for I was in a position to move up and down with the judge. I questioned him as to why he made various placings, but I didn't expect much of an answer. When I told him I was going into the business he surprised me by the frankness with which he explained everything.

I tried to pick the winners in every class, and you can imagine how many times I was right! After the first time I was not bashful about asking questions when my placings didn't prove right. I don't believe I would have learned as much as I did if I hadn't asked the judge and the breeders in the ring as many questions as I thought of. They saw many of the fine points which I did not know were there, and after the first few times I got to looking at the heart girth, the fleshing of the back, the conformation and quality of the animal. I always tried to compare each animal with the next one. I handled the cattle whenever possible, and in this way learned a whole lot about judging quality on sight.

Breeders at the ringside, too, made their placings while the judge was working. Of course, they were speculating on what the judge would do, and by sticking around with them I found myself absorbing a lot of their ideas on type, quality, condition, and other things that go to make up the art

to the standard that I had formed as the result of visiting the International; and I found out afterward that the stock was all second-rate with lots of pedigrees.

I found that it is easy to learn at the International, because the best stock in the world is there for you to study, and some of the best livestock men in the world on hand to answer your questions and help you all they can. You get a thorough demonstration of the different types of livestock at the show, and by keeping the eyes and ears open I can't see why lots cannot be learned.

THE car-lot division for the practical feeder of cattle, hogs, and sheep affords him a chance to get things he probably would not learn from years of experience, and the chances are he would not get it at all. The best feeders in the country compete in this division, and when they place the stamp of "finis" on a load of cattle, hogs, or sheep, it is interesting to see how their word compares with that of other successful feeders of market livestock.

Moreover, these men are always around, and will tell you how they feed and handle their stock. They use various kinds of rations, and the ribbons placed tell which is best.

When I was feeding cattle for market, I always got the most out of the short-fed specials. This is a class wherein the awards are made on quality, condition, and cost of

gains. In this class, men of the caliber of John Imboden, John Hubby, L. H. White, and a few others of our most successful market feeders compete, so that one cannot help but learn things which he would not get out of a library of books or years of experience.

IN THIS class the information relative to rations, method of handling, rate and cost of gains, is available, and by looking at the cattle I never failed to get a whole lot of ideas which helped me in my business. And I believe that any farmer who studies the class gets a whole lot of good out of it.

Some farmers can't understand why a purebred steer can be made to weigh 1,000 pounds, and a purebred hog 400 pounds, when a year old, when grade or scrub stock won't weigh half as much in the same time. They can't see where breeding and feeding enter into the case; but one visit to the International would teach them not only these reasons, but also give them much other valuable information.

I am a college man, but I know what I learned at the International was a valuable supplement to my college education. The fact of the matter is that what I saw, put into practice what I had learned at school.

While the dominant idea of the show is the livestock on exhibition, the human element is as essential and important a factor, and is not forgotten. Men, women, and children have their departments. The livestock, of course, is for the men, boys, and girls, while the domestic science department will interest both men and women.

I believe that if every farm boy were permitted to spend three or four days at the exposition it would be an inspiration and incentive to his intellectual development along agricultural lines, and the city would never appeal to him. He would have a clearer idea of what better livestock means.

Once a boy or girl gets into club work, he or she seldom withdraws. I know I have seen the same faces at the International several times. Look at the boys and girls at the county fair and you will find that not only do the same children come back each with their pig, calf, or lamb, but you'll also find many new faces.

The army of clubs is increasing because I believe the desire for better livestock is inherent in boys and girls. The desire to grow better things, I believe, is born in everyone, but some do not develop this asset. I know it is the aim of every boy and girl to have his or her animal enter the International competition and win.

And if this spirit is maintained as the youngsters grow up, then we need not worry about the future, for we will have plenty of men and women to operate our farms much better than we do, for they will have had a chance which many of us did not have.

"Pay in Advance, Please"

BOLSHEVIKI currency doesn't find much favor among Russian farmers, according to the American Central Committee for Russian Relief of New York City. They quote Robert Rosenbluth, New York business man, recently returned from Russia, who says the farmers of that country have stored their grain in barns and sheds under armed guard. Once the Bolsheviks requisitioned food and stock, giving in exchange quantities of worthless paper money. Now if the Bolsheviks want to requisition something they will have to give coin upon which full value can be realized.

You can always count on farmers standing up for right business and sound government policies. The Russian farmers aren't fooled by the promises of the Bolsheviks any more than American farmers are taken in by the propaganda of the ultra-radical element in this country. Being a landowner makes a big difference in the point of view.

We Put Grandfather's Run-Down Farm on Its Feet

By Carl R. Woodward

THIS is the best potato field on the farm," said my brother, as we looked across the "black field" of the old homestead farm in Monmouth County, New Jersey. "The last crop averaged over 300 bushels to the acre." And then I recalled a remark one of the old "residents" made when we first undertook to grow potatoes on this field.

"Grow potatoes there?" said he. "Why, your grandfather always thought that that field was too poor to plow! And once a year he would send his men down to burn off the Indian grass."

This, in a word, expresses the early history of the field, rich in latent possibilities which were waiting for modern farm science to bring them to light.

My mind ran back over the score of years that had passed since I had dropped corn in that same field. I saw the rickety worm fences and weedy hedgerows replaced by straight woven wire and neat headlands, the briers and weeds which made the hay crop worthless. I contrasted the clean hay that the farm produces to-day with the sand bars and smartweeds that infested the cornfield; and the sickly, stunted crops that proclaimed the soil's impoverishment have given way to rank and vigorous growth.

It was a warm October day, and I had dropped my work at the state college to spend the afternoon in this familiar part of Jersey. My brother took me over one of the fields seeded in August, following the potato crop, where the young alfalfa was almost knee-high, and sleek two-months-old Duroc-Jerseys were moving about with only the tops of their backs showing.

We stopped at the crib to inspect the beautiful cylindrical ears of white-capped yellow dent that he had selected for seed.

And finally we brought up at the hog lot, where only a few spring shotes were left, the most of the herd having been marketed a few days previously. However, this story is not concerned with alfalfa, rye, potatoes, corn, and pigs, but rather with the soil that made their successful production possible.

THE transition of this farm from impoverishment to fertility is a striking demonstration of what can be done with rundown soils on our Eastern farms.

Comprising about 75 acres, its soil is of the sassafras series, ranging from a light sand on some of the knolls, to a heavy loam in the lower portions. There are two acres of wood lot, and one side of the farm is skirted by a 4-acre strip of meadow land, bounded on the outer edge by a ten-foot brook. One half of the farm slopes gently toward the meadow. In short, the place is not extraordinary in any sense, but rather is characteristic of most farms in this part of New Jersey.

The place first came into the hands of my grandfather in the early fifties. He was of the old school of agriculturists—followed general farming, and let Nature pretty largely take care of herself. We used to consider the two fields along the main highway the best on the farm, and a word of their history reveals the reason. Only a limited amount of manure had been produced on the farm in my grandfather's day, and most of this had been applied to the fields closest to the eye of the public, while the poor old "back field" was starved.

Thirty years later, in a badly run-down condition, the place passed into Father's hands. Then began the work of reconstruction, painfully slow at first, for Father's capital was limited, and those days were none too rosy for the farmer.

At the beginning of the present century, however, things took on new life: prices were better, improved farming methods

were becoming known, and the potato industry in Monmouth County began its phenomenal growth. The hard work of years began to bear fruit, and the old place

The conversion of the place into a profitable farm was accomplished by application of the following sound farming principles: (1) proper drainage; (2) judicious use of

toward the meadow. However, between the knolls are a number of depressions from which there is no natural drainage outlet. These were provided with tile underdrains, leading to ditches which emptied into nearby brooks.

Two or three small hollows which could not be tapped with underdrains remained unproductive for a number of years, and were the source of much sport for us youngsters. After a summer freshet we could swim there to our heart's content, and in winter we held skating parties.

FORTUNATELY, not far distant were sand banks, and at odd times we carted hundreds of loads of sand into these hollows. The process was continued over a period of years, so the top soil was not covered deeply, and by plowing and cultivating the sand became well intermixed with the soggy soil. To-day these low spots are producing excellent crops of hay, grain, and potatoes.

"Don't be stingy with manure or commercial fertilizer" was the slogan adopted. The manure produced on the farm

was usually applied before the corn crop; but, as relatively little stock was kept, the amount produced was inadequate. To supplement this, several carloads of stable manure were usually purchased from New York City each year until recent years, when prices became too high.

After trying out manure alone, fertilizer alone, and a combination of manure and fertilizer, Father became convinced that it paid to

use both. So 400 to 600 pounds of a mixed fertilizer, high in phosphoric acid, is usually applied to each acre of corn to supplement the manure.

For potatoes, we began by using 1,000 pounds per acre of a 4-8-10 fertilizer. Increasing the dose seemed profitable, and last year the application was from 1,800 to 2,000 pounds per acre. Since 1915 the proportion of potash has been much reduced, ranging none to three per cent. This has demonstrated beyond doubt that these soils need potash, and now that more potash is available, a mixture containing at least five per cent will be used.

Liberal amounts of high-grade fertilizers are also applied when grass and grain are needed.

CONSTANT cultivation, we found, was the price of weedless fields. Some of the fields were badly infested with briers.

Before we began to raise potatoes, the rotation followed was corn, rye two years, and hay, the first crop of rye being seeded in the corn, and the hay in the second year's crop of rye, the fields being plowed only once every two years. With this limited amount of cultivation it seemed impossible to get rid of the briers, so for four years crop rotation was forgotten and rye was grown continuously on the worst-infested fields.

This seed-bed plowing and disking had the desired effect, and the briers began to look sickly, and finally vanished. As soon as the soil was again clean, rotation was resumed.

Later, when we began to grow potatoes, we found that this intensive cultivation produced fine, clean fields. At first it was necessary to kill the weeds missed by the cultivator by hand. But with the weeds once well under control, handwork has become almost unnecessary. Using a weeder or harrow before the corn or potatoes come through, and weeding and cultivating often while the plants are small, throwing a little soil to the row each time covers the weeds quite effectively.

Aside from controlling weeds, the big object of cultivation—maintaining a loose seed bed—is kept constantly in view. As soon after a rain as it is possible to get on the field, the soil is [CONTINUED ON PAGE 36]



A partial view of the Howard R. Woodward farm near Freehold, Monmouth County, New Jersey, showing where the corn and potato fields meet. This photograph was taken early in July. You will notice that the potato rows run parallel with the fence



Six weeks later the cornfield shown on the left of the above picture had grown until—well, you can see for yourself



This is a picture of the same potato field shown above, taken six weeks later. The yield averaged over 350 bushels to the acre

soon became recognized as one of the best in the community, yielding annually for the past five years products worth from \$5,000 to \$10,000. A year ago, when my father retired and sold out to my brother, it passed into the hands of the third generation. He is carrying on the good work.

Here's a sample of the kind of rye the sandy knolls turn out when they're built up with lime, fertilizer, and green manures. Cowpeas between the two rye crops in the rotation



were the big factor in making these light soils productive. Each field is studied to determine what crops it will grow best and what fertilizer it needs

Are There Golden Secrets in Your Farm?

IT TOOK three generations of Woodwards to learn how to make the old homestead farm in Monmouth County, New Jersey, really pay. The grandfather had nothing but tradition and common sense to guide him. He did "general farming and let Nature largely take care of herself." After thirty years of this the son took charge, and began the work of reconstruction. The light of modern farming was just beginning to spread.

Now the grandsons have the place, and one of them, Carl R. Woodward, tells how they discovered the secrets hidden in every field that opened the golden door of profit. Modern agricultural knowledge, carefully applied, has accomplished this. There are no copyrights on this knowledge. It is free for the asking, and can be obtained from your county agent, from your experiment station, from books, or from your farm paper. And if you want proof that it pays read this story of Woodward's.

THE EDITOR.

The Three Big Things That Brought Me Success in the Hog Business

By J. F. Butt

In an interview with James R. Wiley

I RAISE good hogs, keep them healthy and comfortable, and give them an abundance of good feed on good pasture.

Every time during my forty years in raising hogs that I overlooked or neglected any one of these essentials I lost money.

The foundation of profitable hog-raising is strong, vigorous, healthy, well-grown breeding stock, because they produce strong, vigorous, healthy, easy-feeding pigs that will grow out quickly and economically. Among others I have five big type Poland-Chinas—herd boars—yearlings, weighing around 500 pounds each. All are wide, deep, and fairly long of body, with strong backs, well developed frames, thick flesh and strong, straight feet and legs—just the kind of growthy fellows that will sire rugged, quick-growing pigs that feed out economically.

I like a boar with lots of size, and frame that is heavily fleshed. Such a boar gets pigs that are ready to market at six to eight months as prime butcher hogs, weighing around 200 to 225 pounds, when they are properly fed and managed. Or, if I want to feed them longer because I have plenty of cheap food, or because the market price is too low, they have the frame and bone needed to feed out to 300 pounds or more.

These boars are mated to one hundred or more Duroc and Chester White sows, which makes a cross-bred feeding pig. The sow side of the herd is maintained purebred by mating purebred Duroc and Chester White boars to the best sows of the respective breeds every four or five years. By alternating between the two breeds, I maintain a constant supply of purebred gilts from which to select my brood sows.

I select the most growthy gilts from the sows that produce large litters of strong pigs and raise them. There's one gilt, a smooth, well-grown one, weighing around 275 or 300 pounds, out of a five-year-old sow that has raised an average of nine pigs for every litter. She has made a larger growth of bone and muscle than any of her litter mates. Her mother's pig record and her own growthiness are excellent assurance that she will produce and raise large litters of strong, growthy, easy-feeding pigs.

I RAISE about three times as many spring as fall pigs, because there's more money in spring pigs under my conditions. I haven't the housing equipment to take care of a large number of fall pigs, and I depend a lot on forage to keep down the cost of gains.

The sows are bred in lots of thirty to forty for spring litters. The first bunch of spring pigs is farrowed in early March, the second during early April, and the third in May. Managed in this way a score of small individual houses, with a quarter-acre of land, for each provides farrowing quarters, where the young pigs from over 100 sows can be saved at birth and given a good start in life.

A burlap curtain at the entrance usually keeps the houses warm enough for newborn pigs farrowed in early March. In unusually cold weather an ordinary lantern is sometimes hung in a protected position in each house to provide additional warmth. These precautions have proved sufficient to keep early spring pigs from chilling and freezing.

Gilts for breeding purposes usually are selected from March litters. They are mated the latter part of the following December for May litters, farrowing their first litters when they are about fourteen months old. They are bred the succeeding fall for March litters, which means that they do not farrow a second litter until they are two years old. Only aged sows that farrow March litters are bred for fall litters. They are mated late that fall for

April and May pigs the following spring. Sows farrowing April and May pigs are bred to farrow March pigs the following spring.

Under this system of breeding, gilts raise but one litter up to the time they are two years old, and aged sows farrow an average of three litters every two years. It gives my gilts an excellent opportunity to develop to maximum size. They are not stunted and weakened by producing too many pigs at a young age. My aged sows also keep strong and vigorous. Too often

corn they will eat on good pasture. The same feeds, with, perhaps, wheat middlings and tankage toward the close, are continued during pregnancy—enough to keep the sows in a thrifty, gaining condition. Gilts especially are fed liberally with growing feeds during pregnancy.

I like to have my gilts and sows gain about three fourths of a pound a day during pregnancy. Then they are strong and vigorous—able to suckle a large litter of pigs successfully.

The only time I do not feed my sows

ture is provided by seeding a mixture of four pecks of oats, five pounds of Dwarf Essex rape, and three pounds of alsike or red clover per acre. This is sown early in the spring, as soon as the ground is dry and firm enough to cultivate. The rape and clover are broadcasted with a hand seeder ahead of the drill that seeds the oats. It supplies forage continually from late spring until fall.

The oats grow rapidly, and are ready to graze six to seven weeks after planting. It supplies an abundance of fairly nutritious forage until early summer. By that time the rape has made quite a growth. It makes excellent pasture that supplies considerable protein until late summer, or even later in a favorable season if it is not grazed too heavily. The clover grows more slowly than either the oats or rape, coming on for late summer and fall use.

Four to five pecks of rye are seeded per acre in late August for fall and early spring forage. It is sown with a one-horse drill in fields where corn and soy beans have been produced to hog off.

I have been raising corn and soy beans to hog off with rye as a catch crop for late fall and early spring hog forage on the same land for eight years. The corn crops are as large or larger than they were when I began. The only drawback has been the weeds. I have been able to control them by hilling the corn and soy beans so they can be cross-cultivated.

That makes three crops grown on the same land in one season and harvested by the hogs—corn, which supplies energy and fat; soy beans, which furnish the protein needed for tissue building; and rye, supplying succulence which promotes health and thrift. It pays me big dividends to do this. Experience has taught me that farming is a production business. The more feed I grow per acre the less I have to buy, which means bigger hog profits. Soy beans in corn have been especially profitable, for they supply the protein needed to balance corn and materially reduce the amount of expensive supplementary food like tankage, which I must buy.

LAST, but not least, in my hog-feeding system is an abundant supply of pure water. Nature has favored me in this respect. There are several flowing wells of mineral water in the woods pasture where the brood sows and young pigs are kept, and the big Ox Bow end of the Maumee River, which almost encircles the 100 acres of land where the forage and corn and soy beans are raised, furnishes an unlimited supply of good water for the fattening hogs.

Strong, vigorous breeding stock, liberal feeding on forage, and an abundant supply of pure water are, in themselves, conducive to keeping hogs healthy and comfortable—the last of my three milestones to success in the hog business. Add to these individual farrowing houses with a quarter-acre lot for each house, feeding in the fields as much as possible to avoid unsanitary and disease infected quarters, opportunity for lots of exercise, a constant supply of slack coal, wood ashes, and salt as a worm preventive, and three times as many spring as fall pigs, because there is not equipment to comfortably house a large number of fall pigs, and you have the salient features of my recipe for keeping hogs healthy and comfortable.

THE first community effort of Nebraska farmers to make use of electricity on their farms has just begun in Howard County. Both the housewife and farmer will seek to apply electrical treatment to more and more of their drudgery problems. Threshing machines, windmills, and corn shellers are to be so operated, also washing machines and churns. The farmers built the transmission line themselves, at a cost of \$7,000, and will pay six cents per kilowatt for the power. They are chiefly Danes, heavy landowners and wealthy.



This is Mr. Butt and some of his hogs

the size and vitality of brood sows is materially lowered, and their reproductive capacity injured by forcing them to reproduce too heavily, especially when they are young. Even though my sows do not produce two litters a year, I figure that the larger litters of stronger pigs justify my breeding plan.

Good feeds properly combined and fed in abundance are absolutely necessary to make money on hogs. The miserly feeder who holds on to every ear of corn as long as possible, regretfully doles out a meager portion of wheat middlings, and adds a mere pittance of tankage or none, squeezes dollars out of his own pocketbook. The generous feeder is invariably the man who makes the most money on hogs.

Corn and tankage form the backbone of my feed. Other feeds like wheat middlings, oats, barley, and rye are fed when the price of them is low enough to make them economical. Experience has shown that a bushel of good barley weighing 48 pounds is worth about three fourths as much as a bushel of shelled corn; that is, if good corn costs \$1.60 a bushel I consider good barley an economical feed at \$1.20 a bushel. I rate the feeding value of a bushel of good rye weighing 56 pounds at nine tenths that of a bushel of corn, and a bushel of good oats weighing 32 pounds at slightly less than one half that of a bushel of corn.

Barley, rye, and oats are ground when fed. Not over one third of the ration of growing pigs is oats, and not over one half rye. The latter, of course, is not fed to pregnant brood sows, because of the danger of ergot poisoning and abortion.

Gilts and sows are given a generous "flushing" ration of practically all the

liberally is just before and after farrowing. Four or five days before a sow is due she is put on a light ration of wheat middlings made into a thin slop. For twenty-four to thirty-six hours after farrowing only water is given. Then the wheat-middlings slop again. In a few days some corn is added, which is gradually increased as the pigs get larger and require more milk. Tankage is

also fed—about one pound to every ten of corn, for the sows must have a protein feed to help make milk.

Pigs at about eight weeks old are just at the last critical period of their lives. It's been my experience that pigs of this age and size make profitable market hogs only when they are weaned without checking their growth. There are self-feeders where

the pigs can eat corn, wheat middlings, and tankage without being molested by the sows. These eight-week-old pigs depend almost entirely on the feeds in the self-feeder. They will scarcely notice the loss of the small amount of milk they are getting when the sows are removed. They will grow right along without a check on corn and tankage, especially when they have an abundance of good pasture.

Forty-odd years in the hog business has convinced me that I can't make much money raising market hogs without plenty of good pasture for them. An acre of the right kind of forage fed with corn and tankage will produce as much pork profit as an acre of good corn. I wouldn't attempt to raise hogs without using pasture during as much of the year as possible. My hogs get forage eight to nine months of the year, which is the best I can do in northern Indiana.

Late spring, summer, and early fall pas-

J. F. Butt is the largest hog producer in Allen County, Indiana, and one of the best in the country.

This is the story he told James R. Wiley of how he has made his success by keeping good breeding stock, and seeing that it is healthy, comfortable, and supplied with an abundance of good feed on good pasture.

Mr. Wiley is one of the extension men at Purdue School of Agriculture. THE EDITOR.

The Mossback

He teaches the rattle-brain a few fine points of small-town newspaper ethics

By William Dudley Pelley

Illustration by Henry Botkin

THERE was no doubt about it—our little Vermont town of Paris had a second newspaper at last. Young Joe Dicks had carried out the threat made before he quit our employ as reporter. He had purchased Joel Sibley's print shop. He had produced a paper. It lay before us on the exchange table now, smudgy and pathetic and half full of boiler plate. But it was a newspaper, and we of the Paris "Telegraph" crowded around to inspect our new contemporary.

We were still looking it over when Uncle Joe Fodder came in.

"Look here, Sam Hod, this won't do at all!" he cried in his cackly voice. "This new paper—right off the bat in the first editorial announcement—is hurtin' folkses' feelin's. This Dicks boy starts pokin' fun at Dr. Dodd for bein' on the school committee!"

"I know, Joseph—I know!" declared Sam Hbd, our editor-owner, sadly. "Alec Potherton's set him up to the whole business, Joseph. It's too bad, too bad! The boy came here, a stranger; and mighty gullible, too. He fell in with Alec, thinkin' Alec was a bright man. You see, he didn't know Alec like we know him. Each morning he went into the shoe store for items, and Alec urged him over and over to start a paper. He'd stand with him behind the shoe-store door, and Alec would classify the liars and double dealers and scoundrels and thieves and swindlers and publicans and sinners that passed outside. Ever since he came here, the lad's been handicapped by a nonsensical prejudice. Now it's cropped out in this!"

"So Alec's behind it, hey? That accounts for this crack at the school committee. I remember, now, Alec's been sore because they didn't pass that dunder-headed kid of his into a higher grade this winter."

"I TRIED to warn the boy," went on Sam Hod. "But he wouldn't be warned. He seemed to think I was dead set against having any human-interest stuff in the local columns just because what he wrote had a little gaff in it somewhere to prod into folks and leave a little hurt to their feelings. 'Here's this Broken Jones yarn in particular, Joe,' says I to him, the night he quit us. 'In a little town you can't get away with it. Jones has his friends—lots of them. They know his history, and sympathize with him. Here, in the first place, instead of calling him Ezra Preston Jones, you bluntly term him Broken Jones in print. Now, Broken Jones is what the town calls him, and he probably doesn't resent it, and neither do his sympathizers. But you can't call him Broken Jones in print, Joe. Right off the bat there's a cruel insult.'"

"Then, all through your yarn, I says, 'you've inferred that if he wasn't half foolish it wouldn't have happened. Maybe he is, Joe. But the little local paper can't come out in this way and say so in print, either. It can't parade the weaknesses of the home folks, never mind how humble they are. It's not only a mighty un-Christian thing, but it's suicidal to yourself, Joe. To get your name in the paper in a little town is a mighty serious thing, Joe—at least, up here in New England. People demand that their names and the reports of their activities be handled with dignity.'"

"But he never saw my point. He said I was a mossback. Poor kid! He's got a few awful jolts coming to him before he succeeds in country-town journalism."

"I should think he'd go slow at first, and sort o' feel his way along—him with a business to build among folks he ain't quite used to, and a wife and baby to support."

"God makes youth supple in heart as well as in body in order to stand the awful bumps that come from experience, Joseph. It's proof of His mercy," commented the old editor sadly.

Sam leaned back in his chair. A far-away look came in his eyes. For he had not missed the fact that the boy's little wife had come on from Springfield, and each day pushed the willow baby carriage down the street and into the print shop, and watched her youngster while she helped out at the case because the "Blade" could not afford a linotype. Perhaps the old editor was thinking of a time, also, when a good woman had kept down his composition bills by helping gratis at a type case. That is the pathos of the country press. Legion are the country editors who could not always make a living if it were not for the unselfish and unpaid assistance of their wives.

"Poor boy and girl!" he said aloud. "Trying to get ahead. It's pathetic, Fodder. I wish I could help him and steer him aright. Alec is a false friend to him, but I'm afraid he'll pay dearly finding it out."

Sam and the old soldier were still discussing the thoughtless insinuations in the "Blade's" school-committee editorial, when the door opened and little Miss Angelina Lasher entered the office.

Little Miss Lasher has been teaching school in Paris for more than twenty years. She is not so cheerful as she was once. She is small and frayed

out and gone to seed. We knew privately that the board had several times considered dismissing her. Yet twenty years before, when Miss Lasher was not old and frayed out and gone to seed, she had been loved by two young men in our town. One was Broken Jones before misfortune overtook him; the other was Jack Sheldon.

Angie Lasher had chosen Jack, and had been engaged to him at the time the Spanish War broke out. Jack had died in Chickamauga, and little Miss Lasher's heart had been buried with him. Paris knew her story, and was kind. The school committee continued to change her about from building to building and room to room, and she in time knew that she kept her place out of pity, and tried to bear her disappointment and life tragedy bravely, and not to let it embitter her and come out in her treatment of the children.

"MR. HOD," she began awkwardly, not seeing that Uncle Joe Fodder was present on the other side the big office stove, "I wish you'd tell me just what to do; you're a member of the school committee, but you've been a good friend of mine aside from that, and I haven't anyone else to go to. The new paper we've got here has been saying some things lately that are kind of hard to overlook or answer, Mr. Hod."

She stopped because there was a little hitch in her voice, and she could not trust herself to go on until she had better control over it.

"He says, this young man does," she finally proceeded, "that the school committee is letting too much sentiment interfere with the choice of school teachers: I know he means a lot of us who have been here a long time and maybe sort of got into a rut. But, at the same time, it's hard for us to resign—we who have been here and teaching the boys and girls—"

Sam knew, and Uncle Joe Fodder, staring over his spectacles, knew, that what she meant to say was that she couldn't afford to give up her place. It was the only thing she knew how to do to earn the few dollars necessary to keep her off the town. So the old editor broke in and answered:

"I wouldn't take it too much to heart, Miss Lasher—what this young chap says. He doesn't understand the local situation, and he's got a lot of boyish steam in him that he's got to blow off somehow. Just you stick in your place, and don't resign until we ask you to do so. And from present indications, and what you've been

to the boys and girls of Paris, that'll be a long time yet, Miss Lasher. Us old-folks who are content to keep a slower and more conservative place are still in the saddle."

Tears came in little Miss Lasher's eyes then. She got out her handkerchief with her bony little red hands, and wiped them away, and blew her sharp little nose, and folded the handkerchief and wiped her eyes again, and restored it to her plaid waist.

"Poor Angelina!" mused the old soldier, after the frayed little school teacher had gone out. "I remember a time when she was the daintiest and prettiest girl in Paris!"

It was early in April that Joe Dicks started the poor little six-column, four-page, boiler-plate effusion with its four or five columns of local and editorial that he called a daily newspaper. Late one evening of the following month, his telephone bell rang, and the curt voice of Alec Potherton ordered him over to the shoe store.

"The annual election of school trustees comes off on the twentieth," Alec opened. "By gad, we aren't going to have the same bunch of male old ladies on that board if I can help it. And by the help of this paper I know that I can. We're going after that bunch of mossbacks with hammer and tongs."

"I've tried to do my best so far," began the Dicks boy dubiously, "although sometimes I think—"

But Alec didn't give a hoot just then what the Dicks boy sometimes thought.

"My orders to you are to start something!" he declared. "Get out your editorial stylus and dip it in vitriol. Punch the eternal tar out of the opposition. Show up our schools for what they're worth. Nothing you can say or do will be too strong to suit me. Go to it!"

THERE was a lot more talk, and finally the Dicks boy returned to his office.

"But you'd think he'd put up all the money to start and run this paper," protested the young wife, "just because he went on your notes to get control of this print shop. And he hasn't, Joe. All our savings—seven hundred dollars' worth of them—have gone into this paper. And sometimes, Joe, it looks as if we stand to lose them." Her voice ended in a whisper.

"I know it, Nan," he replied. "But I can't talk back just now—not with the second of those notes falling due on the twenty-fifth. I've got to do my darndest to help turn that present school committee out and put Alec's committee in."

And he sat down with his legs under his typewriter, and twirled in some paper, and lighted his pipe, and stared gloomily into the wall space in front of him.

That was on a Tuesday. Wednesday evening his paper came out with a big broadside of wood type attacking the board members in earnest. He called Paris' attention to the fact that three of them had female relatives teaching in the public schools. He referred to the fact that Judge Farmer acted as chairman because it put control of the school's money in his hands, and therefore into the judge's bank. He accused Sam Hod—whom he did not call by name, but always as the Mossback—of being represented there because it benefited his political fortunes. Last, but not least, he said that old Peter Whipple had no business on it because Peter's children were in the state reform school. Just what he hoped to gain by that last slur is vague. But it was a cruel gash at Peter, the kindly old teller in Judge Farmer's bank, who had been cursed with an incorrigible son. And that night, when the "Blade" appeared on our streets, the liars and double dealers and villains and scoundrels and thieves and swindlers gathered together in knots and were wroth—exceedingly wroth.

[CONTINUED ON PAGE 46]



"So Alec's behind it, hey? That accounts for this crack at the school committee."

Ways That Will Save Hours and Dollars For You on Your Machinery

By F. W. Ives

Head of the Farm Engineering Department, Ohio State University

I AM the son of a farmer and the grandson of a farmer. I have worked on my father's farm, and have worked on the farms of a number of other men. Some of these farms were operated in a scientific way; others just ran themselves, as witness the weeds in the fence rows, the paintless buildings, and run-down machinery. I have observed first-hand the effect of care and the lack of care on implements and machinery, both from a money and a labor standpoint. In late years it has been my privilege to talk of these things at farmers' institutes, at annual farmers' week meetings, to agricultural students, and to advise individuals on the subject.

I call to mind a mowing machine of standard make, purchased in 1897, which is still being used, and which is good for further years of service. I have seen the same make of mower scrapped after seven years of use, the last year of which was very unsatisfactory. *The difference in useful life was not due to any inherent quality of the machine, but to a difference in the character of the operator.*

I have seen nearly identical grain harvesters working under similar conditions last from four to seventeen years, depending on the owner. Threshing machines last from three to forty years under different kinds of care. So we might go through the entire list of implements and vehicles. Careful study of the conditions in all cases always leads back to the same conclusion—*personality of the owner.*

Occasionally we do find a poor machine of the sort made to sell. Again, there may be justifiable reasons for abandoning the machine before it is worn out. Improvements in a given type of machine which increase its usefulness, decrease the power required to operate it, or reduce the number of men to perform a certain task might be cause for scrapping the old to buy the new. Most of our improved farm machinery is the result of a slow growth rather than any radical change. We seldom need to discard a machine because it is obsolete, but I would most certainly discard a one-horse, one-row walking cultivator in favor of a three-horse, two-row cultivator if the size and lay of my fields seemed to justify it. If the one-row cultivator were in good repair I would probably realize nearly its full value by selling it to someone who could use it.

THE purchase of a tractor usually involves specially designed implements, as the horse-drawn varieties are, as a rule, not rugged enough to stand the new conditions of service. Therefore, when you change from the horse to the tractor, you should be able to make favorable exchange terms for such implements as you must discard. To do this, the discarded tools must be in good shape as to repair and appearance.

The above remarks are made from the money viewpoint. We are beginning to realize that time and money are the same thing. One farmer who employed me keeps all implements in a good state of repair. One might hitch to a plow and cut a clean furrow the first round. Why? The share was sharp and the moldboard bright. Why? The share was sharpened in the winter months. The moldboard had been coated with oil when it was last brought in from the field.

For another farmer I took out a plow, and started in a field of waxy soil. The result could hardly be called a furrow, but rather a dirty mark across the field. The plow would not stay in the ground, nor would it scour. My employer advised me to plow a few furrows at the side of the road to scour the plow, while he went to town to buy a new share. Net result—one-half day lost for man and team, half day lost for farmer, partly worn share scrapped. The same farmer had me hitch three horses to a corn binder which had been left in the field the previous year. Result—one-half day lost, several expensive repairs, and nearly ten acres of corn frosted before cutting could be completed. These examples might be cited indefinitely. The instance of the two mowing machines, one of which lasted but seven years and the

other in use after twenty years of service, might be duplicated in any community. The table shows a comparative cost account of the two machines at the end of twenty years. We start with a new machine at the price paid in 1897, and end with a new machine at the price paid in 1917:

A TALE OF TWO MOWERS		
	Machine discarded after seven years	Machine in use after twenty years
Original price paid 1897..	\$45.00	\$45.00
Junk value end of period..	5.00	5.00
Net cost	\$40.00	\$40.00
Replacement charges to end of period	165.00	65.00
Total, not including interest and repairs	\$205.00	\$105.00
Annual depreciation	14.3% or \$5.71	2% or .80

Repairs are not counted, since time and money spent in making them are amply repaid by time saved in the field. Not counting interest on the investment or repairs, it will be seen that the careful man earned \$100 in twenty years, or eight per cent on his original investment. If a similar saving is made on the remainder of the equipment, the total saving each year is astonishing. The average Ohio farm is about 88 acres. If operated as a general purpose farm it would require a minimum investment of about \$1,000



All ready for next year?

How I Got Started With Purebreds

By Farm and Fireside Readers

First Prize Letter

I BOUGHT a farm some ten years ago and paid for it with a big mortgage. I was confident I could pay off the mortgage with money from good crops. I had no purebred stock, but prided myself on having the best scrubs in this neighborhood. At the same time I was raising a family of six children, well versed in the art of eating and kicking out shoes.

Well, occasionally my crops were good, but often I had to cut a lot of corners to meet even the interest on the mortgage. Two of the children wanted to attend high school, and that year the crop was a practical failure, so I had to reduce my scrub stock to get through the winter.

Something over five years ago my wife and I held serious conference. We decided to turn over a new leaf in our farming operations. We had heard and read a good bit about Poland-Chinas as mortgage lifters, so I made a trip to Iowa and visited some of the best herds in that State. My first purchase was a young boar by that wonderful sire, A Wonder, who had for his dam a great sow, sired by Big Joe, that weighed more than 1,100 pounds. I also bought a fine sow bred to a celebrated boar.

In the meantime I was becoming posted on how to care for purebred hogs—I was learning something every day. The young boar grew steadily. Neighbors advised me to have nothing to do with registered hogs—said they would break me up. (They didn't know I was already as near "broke" as is possible.) I listened to their advice, then went straight to a banker and informed him that I was going to look at some extra good hogs and wanted to bring home with me the best herd of brood sows that ever came into Kansas, and that I would need about \$2,000. The banker told me that they had the money for me, and that they would be delighted to let it out in such a good cause.

Well, I got the hogs. When my neighbors saw them—and when their litters began to arrive, gilts farrowing from seven to nine pigs per litter and the older sows farrowing up to twelve fine, husky pigs, they changed their tune. I held a sale that fall—I sold every scrub, hog, sheep, cattle and all—which paid for the sows and all sale expenses, and I had a fine bunch of fall pigs left besides the sows. I have since added other sows and hogs. I have shipped hogs into several different States, and persons from many States have visited my farm to see this fine herd of hogs, and I never heard of anyone being disappointed when they saw them.

I have paid off the farm mortgage, and have bought 150 acres more of Kansas land. I now have 380 acres and the best herd of Poland-Chinas one could see in many a long day's travel. I also have a nice flock of Shropshires—big, woolly fellows that bring in the money—besides a number of fine cattle and horses. But the more I see of Poland-Chinas the better I like them. I keep them immune against cholera. I haven't time [CONTINUED ON PAGE 50]

in implements and machinery. Eight per cent, or \$80 is decidedly worth-while when we consider that the average labor income from such a farm is about \$360 per annum. It cannot be denied that a greater part of this saving is due to proper protection against weather. Less repairing will be necessary where the machinery is housed. The question then arises as to how much money may be properly invested in the housing of tools.

IF THE average saving is \$80 each year, we may call the amount income. Capitalized at 10 per cent it is equivalent to a money investment of \$800 at 10 per cent interest. In other words, we may invest \$800 in a machinery shed, rent it to ourselves at \$80 per annum, and just break even. The 10 per cent is divided into 6 per cent for interest and 4 per cent for taxes and upkeep. If we have more than \$1,000 invested in equipment, the earnings will be correspondingly larger. A shed housing \$2,599 worth of equipment will yield 36 per cent net on this basis. Better than oil stock, isn't it?

There is much room for storage in the barn driveways, double cornercribs, etc., that will do very well for wagons, buggies, manure spreaders, and equipment that is in frequent use. These places are not good for the storage of machines used in season only, be-

cause it is hard work to move them. The first tool needed is too often stored the farthest from the door.

Another great objection to storage of tools in barn driveways is that during harvest the machinery must be left out in the weather or else shifted frequently. Another objection is the dust, dirt, and not infrequently the droppings of fowls that get into bearings, chains, and gears.

We are often cautioned against putting all our eggs in one basket. Yet we find farmers that store all their grain, hay, equipment, and livestock in a single structure, thus inviting complete disaster in case of fire. It is stated by fire underwriters that farm fire losses in the United States for the year 1918 amounted to \$8,000,000.

Suppose you were to have a fire: would it not be a great consolation to have left a shed full of machinery? Insurance cannot pay replacement costs nor for loss of time.

If implements are stored in a shed according to seasonal use, how much easier it is to get them out when needed! Haying tools are in one section, tillage tools in another section, seeders and planters in another, and harvesting machinery in still another. No need for moving the binder to get at the disk harrow, or to take out a side-delivery rake to get at the grain drill.

To my mind, convenience, elimination of fire hazard, clean storage, and saving of time overbalance all arguments against the separate implement shed.

There are two types of implement houses—the wide house, having a driveway for vehicles, with a bay on either side for implements, and the long, narrow house, divided into sections and having doors all along the front. Each has advantages over the other.

The wide house will generally result in a better looking structure, and the driveway may be made large enough to shelter a load of hay. (Why not take hay in from the end of the barn and save the expense of a driveway?) The narrow shed does not require interior posts, and the roof will not be as costly because of the short span.

THE wide house may be built 40 feet wide, divided into a drive 16 feet wide, with a bay on either side, 12 feet in width. The length for the average farm will be about 36 feet. The economical width for the narrow shed is from 18 to 24 feet. A length of 48 feet will answer for the average farm. A house 22x76 feet will accommodate the full machinery equipment for a 200-acre farm, and provide a workshop in addition.

The doors may be from 12 to 16 feet in width. Ten feet in height will take in practically all machinery except certain types of hay loaders, threshing machines, and spraying wagons. Twelve feet in height will take in practically anything.

Since fire protection is one of our objects, it is well to consider the materials of construction. Fires originating on the exterior of a building are usually due to lightning or burning embers. Hence, if we install lightning rods and provide a non-inflammable roof, we are fairly safe. Certain woods kindle less readily than others, redwood being an example. Of roofing materials, slate, tile, asbestos, and metal roofs are the best. Certain brands of ready roofing are covered or coated with ground slate or gravel, and are practically fire-proof. We should likewise seriously consider the use of concrete, stucco, tile, brick, or their combinations for the side walls. Not only are they a protection against fire, but against early decay as well. The first cost may be slightly more than wood construction, but the annual charge for painting and repairs will be practically nothing. This will increase our income from the 6 per cent allowed for interest, to nearly the full 10 per cent estimate for both interest and depreciation.

In planning a tool shed, I first list and measure all the tools to be housed. The floor space of each tool is laid out to scale on rather heavy paper. These little squares, representing floor space, are cut out, and then [CONTINUED ON PAGE 31]

So Many of Them Never Happen

By Bruce Barton

LAST summer a business man visited a well-known economist and confessed that he was greatly perplexed.

"I subscribe to a Business Conditions Service," he explained, "and for two years that service has been predicting a panic in its monthly letters.

"Every letter has warned us dolefully to watch our credits, keep plenty of cash on hand, and cut down the number of our employees. The panic was sure to come, it said, and we ought to be prepared.

"So for two years I have lived in fear and agony of spirit; and what I want to know is this: When is this panic really due to reach us? The suspense of waiting and watching for it is terrible."

The economist answered with a smile.

"You remind me of the man who was sailing on a ship in South American waters," he said. "He had read much about the Amazon River, and determined to miss none of its beauties. Day after day he watched for the first signs of its magnificent expanse, and finally he approached the captain:

"Tell me, when do we reach the Amazon?" he demanded.

"The captain looked at him amazed. 'Why, man, you have been sailing on the Amazon for the past two days,' he explained.

"So with the coming panic," the economist continued. "It has come, and part of it has gone. Day by day the process of contraction and deflation proceeds inexorably. One month the silk trade feels its effects, and is forced to a read-

justment. Leather and wool, and a dozen other commodities, are already seeking lower levels. You needn't strain your eyes looking into the future for the panic: the panic is happening right now."

That same week I read in a letter issued by one of the nation's great banks a sentence to this effect: "It can now be fairly said that the country has passed successfully through the period of post-war



Hilltop

Verse by Warren Wilmer Brown

Photograph by Frederick F. Frittita

LOW above the hilltop's ridge there hangs in majestic silence
Soft piled masses shimmering with silvery fire and rose—
A mighty cloud that seems the enchanted surf of some calm sea
Of loveliness receding mysteriously into the depths of azure
Infinity.

Slowly it moves, and in solemn rhythm with the swaying
Of the slender trees that sadly watch its parting.

There is no sound here but the long suppressed sigh of leaves,
And of tall grasses that eagerly implore, but how quietly!
The gentle kiss of rain for their parched, exhausted souls.
Or is it the uneasy, fathomless sigh of fulfillment? For summer
Has come and gone, and the sweet, tender blossoms of the slopes
Have passed in bright processional. Now comes the requiem pageantry
Of goldenrod and asters. Trailing robes of saffron and of sapphire,
Of topaz and of amethyst, they climb the height like fairy pilgrims,
Laden with precious gifts of beauty, bound for some sacrificial shrine
Set loftily against the sky.

readjustment, and none of the direful things predicted for that period have come to pass."

"And none of the direful things . . . have come to pass." How well that letter sums up a large proportion of the experience of each one of us. We go through life in fear of what lies around the corner. And having turned the corner we find all too often that what we trembled at was nothing but a shadow.

In the first days of the war a group of financiers, gathered at a summer resort, were recounting the reasons why the conflict in Europe must bring economic disaster over here. One of the things they feared the most was that there was not sufficient gold in the country to meet some New York bonds that were just about to come due.

A few weeks passed and those very same men were shaken by another fear: so much gold was flowing across from Europe that they were afraid the flood would swamp us.

Those men, and most of us for that matter, learned this from the war—that the tough old human race has far more power of resistance than we had ever given it credit for; and that worry does nothing but make matters worse.

Lincoln had a saying when troubles piled upon him and the burden seemed too great to bear. "This, too, will pass," he would say.

By which he meant that men had thousands of times before gone through crises just as difficult, and that no amount of worry would do the slightest bit of good.

That is a good saying to remember: for every life has some great periods of trial that demand every ounce of philosophy and courage and faith.

But the tragic thing about us is that we waste so much of our time in worrying about the trials that are going to happen.

When so many of the worst of them never actually happen at all.

The Danger Your Children Run from Getting Overtired

By William R. P. Emerson, M. D.

JOHN BROWN has bought that fine horse. He will spoil him in three months!" This remark indicates the prevalence of well-recognized standards for the care and training of horses. But how many men and women who would not think of overdriving a horse have similarly definite ideas as to the fatigue limit of the growing child?

Farmers work under heavy pressure, which makes leisure and recreation difficult of attainment. As a result some are apt to under-rate the value of these factors to themselves, and, what is a more serious matter, to their growing boys and girls. They fail to distinguish between recreation and loafing, and do not realize the right use of time. Most fatal of all, they come to think that overfatigue is normal.

Fatigue is normal, but overfatigue in a growing child is a means of deadly destruction which should be avoided like the plague.

Fortunately, the farmer of to-day is ready for progress in this direction as in others, once he has been shown the new venture is worth while.

It is the purpose of these articles to show the value of a health program which will conserve the energy of girls and boys so as to make them men and women physically fit for their part in life.

Chores and Contests

The relationship between malnutrition and the topics already discussed in these articles—physical defects, bad feeling, faulty health habits, etc.—is evident. Another condition which is often accepted as a necessary cause of discomfort rather than a fundamental cause of permanent injury is the condition of overfatigue. In our nutrition clinics many of our most difficult and obscure cases of malnutrition which fail to gain after defects have been removed and regular food and health habits established, are finally traced to overfatigue. This may be from work, study or play, or from a combination of these causes.

Anyone who has been brought up on a farm, and has watched other children grow up under less favorable circumstances, knows that chores have a great educational value. But that does not mean that a child should be overloaded with them. Great injustice is done by requiring of any child tasks that are beyond his strength, but in the case of the malnourished child this will lead to certain disaster.

We know that the appearance and health of an animal depend on the food and the care which he received, but a child may be "dragged out," irritable and faultfinding, and it is assumed that this is a natural state for a growing boy. *Symptoms which in a calf or a colt would lead to prompt action* will be passed over in a child with the remark, "Oh, that's just his way—he was always like that!"

Many parents resent being reminded that their children are little animals, but nothing is gained by ignoring that fact. The whole of a parent's job is not fulfilled, it is true, by providing proper conditions for body growth and the means to insure it, but without these all other plans are built upon an insecure foundation.

There are dangers even in the clubs and contests which the boys and girls enter. This is especially serious when they are added to an already full program. Many an underweight, malnourished child, carried away by ambition and the spirit of competition, will throw himself into a piece of work, excellent in itself, but requiring strength which is needed in daily growth.

It is difficult for many adults to appreciate how much energy and strength are required in simply growing. Holidays and rest times should not all go into work. It is desirable that children should be profitably employed, but there must also be some margin for growth. The active, energetic



Two positions favorable for complete rest—correcting the fatigue posture of round shoulders and cramped chest. The pillow as here placed is especially helpful when taking a rest period on the frequently sagging bed



child does not see the ill health and possible invalidism that will result from overdoing, but the parent must learn to look forward to such consequences in children as well as in the farm animals.

Every family needs a health program. Parents complain when children will not look ahead. They do not realize that time spent in planning is the best of investments. Here is a chance for parents and children to work out together a plan in which all will have a part. This plan, when adopted, should be without trivial interruption or unnecessary change, but capable of adaptation to greater needs as they arise.

Make a Program

The first item in this health budget to be considered is the high cost of overfatigue. Children should be taught to view their health as capital, and that overfatigue means overdrawing one's account. This is not investment but waste. There is no justification for putting a mortgage on one's nervous strength.

In order to make a successful health program, the first step is to make a record of the present activities of the malnourished child. We have found a 48-hour record the best basis, as this gives a view of the child's activities for two days, and the average will therefore be typical. If the school days are fairly similar, a Friday and Saturday will serve to give a comprehensive picture. Notice the total amount of time given to play, to work, and to school. What part of the day is spent in the open air? How much time is actually spent in bed, and how many minutes at the different meals? Is there too little time out of doors or at play, or too much exercise, too much school pressure, late hours, too many outside interests, etc.?

Such a "close-up" picture will often prove to be a revelation, and it will not be hard to find changes which can and should be made at once. The new program should provide for

rest periods and lunches in the middle of the morning and the middle of the afternoon for every underweight child, and activities should be proportioned to the child's needs and strength. A time budget will help you to a better distribution of his energy.

Some Bad Schedules

James G., age 13, 9 lbs. underweight.

- 5 to 7—Rises, chores, breakfast.
- 7 to 8:30—Trip to next town and half-mile walk to high school.
- 8:30 to 12—In school, with 15-minutes recess at 10:15.
- 12 to 12:30—Cold lunch at school; eaten in basement with other boys.
- 12:30 to 2—In school.
- 2 to 4—Return trip home, with cold lunch on arrival.
- 4:15 to 7—Chores and supper.
- 7 to 9:30 or 10—Reading, games, study or moving pictures.
- 9:30 or 10 to 5—Sleep.

Times between meals: 6 hours from breakfast to lunch—too long for a malnourished child; 4 hours to afternoon lunch; 2½ hours to supper. Continuous schedule, 13½ hours. Sleep 7 or 7½ hours.

Saturday schedule: Chores, 1½ hours before breakfast; farm work, 5 hours to noon-day meal; 4½ hours in the afternoon. Steady physical labor, broken only by meals, 11 hours.

Isabel B., age 15, 30 lbs. underweight.

- 5:30 or 6 to 7:15—Rises, breakfast, gets ready for school.
- 7:15 to 8:30—Walks 15 minutes to car line, 30-minute ride on car, walk of 5 blocks to rural high school.
- 8:30 to 12:15—In school.
- 12:15 to 12:45—Recess and lunch.
- 12:45 to 2:15—In school.
- 2:15 to 3:30—Return trip home; cold lunch.
- 4 to 6—Delivers milk to 3 neighbors, all on separate trips, making four miles of walking.
- 6:30 to 7:30—Supper; washes and wipes dishes for 8 people.

Two boys of fourteen, the one up to normal weight and ready for a day's work, the other ten per cent under the average weight for his height, and not capable of continuous exertion. A program that could be easily carried by the one would produce serious overfatigue in the other. The underweight boy should have a program which is proportioned to his needs and strength

- 7:30 to 9:30—Studies lessons.
- 9:30 or 9:45 to 5:30 or 6—Sleep.

Time between meals: 6 hours between breakfast and midday lunch; 3 hours to afternoon lunch; 3 hours to evening meal. Continuous schedule, 16 hours without rest or recreation. Sleep, 7 to 8 hours.

Pauline L., age 14, 15 lbs. underweight.

- 5:30 to 7:30—Rises; cooks breakfast for 3 people, her mother who is sick, her little brother 7 years old and herself; gets her brother and herself ready for school.
- 7:30 to 8:30—Car to town and walk of 6 blocks to school.
- 8:30 to 12:20—In school.
- 12:20 to 12:45—Recess and lunch.
- 12:45 to 2:15—In school.
- 2:15 to 3:30—Errands in town and return trip home.
- 3:30 to 7:30—Straightens up the house; studies one or two lessons; gets supper and clears away.
- 7:30 to 9 or 9:30—Studies lessons and goes to bed when finished.
- 9:30 to 5:30—Sleeps with little brother, who is restless; in room near mother; occasionally has to get up at night to wait on her.

Time between meals: 6 hours from breakfast to midday lunch; 6 hours to evening meal. Sixteen hours' continuous work or study. Broken sleep, 8 hours.

It will at once be assumed that necessity demands these overfatiguing programs, but it was not so. We have found that in the majority of cases overfatigue arises, not from necessity, but from lack of plan. Where the family circumstances are poor, there is all the more necessity for careful planning.

In the case of Isabel, other arrangements were made at our suggestion about delivering the milk, thus leaving her time in the afternoon for a rest period and some outdoor play, and an opportunity to do some of her lessons before supper, and thus get to bed earlier at night.

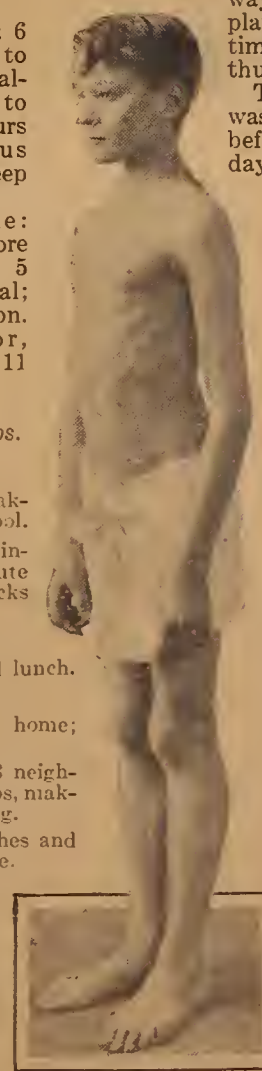
Pauline was told that she must have a lunch at a regular time in the afternoon, followed by a rest period, before starting in to study; and that errands must be left until Saturday or provided for in some other way. It was also shown how, by careful planning, she could reduce the amount of time needed for preparing breakfast, and thus lengthen her hours of sleep.

The worst feature of James G.'s schedule was the hour and a half of physical labor before breakfast, and the long unbroken day's work on Saturday. A little food taken before starting the chores, and a lunch and rest period of half an hour in the middle of the morning and afternoon on Saturday would greatly reduce the danger from overfatigue. It was also found that opportunity was provided at his school for hot drinks and food prepared under the direction of the domestic science teacher. But the younger boys preferred to go off by themselves and eat cold food brought from home.

In a recent study of conditions in the South we found the malnutrition in a rural high school to be 61 per cent of the entire membership, with an additional 10 to 20 per cent of border-line cases. This record was almost equal to that in a neighboring colored district, where conditions, known to be bad, showed a situation not more than 10 per cent worse.

For the boy that is to be a man and the girl that is to be a woman the above schedules are too strenuous. It is fair to assume that there is less pressure upon these children at thirteen and fourteen than will come with each succeeding year. School, home, and social demands will increase rapidly, and the chances are good that within a few years they will fall into some serious illness, or, after spending what reserve they have, will drag along on the border line of ill health and failure.

One of the most distressing memories of my [CONTINUED ON PAGE 33]



Grace Margaret Gould Says

That there is such a thing as economy in dress if you only know how, and that style is not dependent on the amount of money you spend

About Your Clothes

IN BUYING new clothes for the new season, you generally get little for much—so, at least, the men say. This year, if you only know how, you may get much for little—no matter what the men say. For instance, there is a way of converting the suit skirt into a one-piece dress. You wear it with a redingote, which is high style right now. But, of course, you must be careful to have touches of the skirt fabric introduced into your redingote.

And then you can wear this same separate suit skirt with different blouses—one in peplum effect made of tricolette or satin, or a blouse in tucked-in-the-waist style of crêpe de chine matching in color the skirt. And still another idea is to snap on to the bottom of your skirt a band of soft leather, say in dull red, deep blue, copper, or dark green, and then have suspenders matching this leather band in color. In this way you can get five different-looking costumes, using the skirt as the main feature.

Then there are many variations you can introduce in a one-piece dress: Change the girdle; wear it with a sash; or snap on floating panels. These panels often take the place of the tunic which has been for so long associated with the one-piece dress.

To be sure your winter wardrobe is up-to-date, there are a number of things you must specially bear in mind. For instance: The smart tailored suit shows a straight, moderately narrow skirt and a coat that is much longer than last season. Some coats are 42 inches in length. In the new suit coats the unbelted back is the feature. Shoulders are narrow, sleeves tight, collars bulky. Siberian squirrel, dark brown, navy blue, and black are the most fashionable colors. In dresses, the smartest are the one-piece models in moyen-âge effect. These are the dresses that show the long waist line. When panels or tunics are used, they are frequently set on at the hip line. Sleeves are long and embroidery is the fashionable trimming. Wool embroidery in bright colors gives the smart look to many everyday dresses. It is used not only on collars and cuffs, but frequently also bands of this gay colored embroidery are applied to mark the hip line, and often the front of the skirt at the bottom is embroidered.

In fabrics there are many velvety woollens. Those known as veldyne and vel de cyne are specially liked. Duvetyn, velour, velvet, and velveteen are all fashionable fabrics. For everyday dresses, tricolette is the most popular cloth, though Poiret twill, serge, and the worsteds are all used.

Inquiries promptly answered.

Bags That Are New

IF YOU want a plain bag for everyday use, or a bag for dress-up or party occasions, you won't have a bit of trouble this year. There is no end to the variety of the new bags. There are sturdy, good-looking ones made of tooled leather. The newest shape is the box, and many of them are fitted, sometimes with just a purse and a mirror, and then again with a little set of manicure articles.

There are lovely soft bags made of duvetyn and decorated with steel beads. The smart idea is to have the duvetyn bag match the color of your top coat or your suit. And there are bags entirely of wooden beads, in such color combinations as deep blue and orange, red and cream-white, dark gray and lavender, and other bags of beads that are very flat and shiny, and are woven in brocade designs. At a distance these very new beaded bags give the appearance of metal brocade. Bags of Bohemian straw are new. The straw is dyed in wonderful colors, and then woven to form the bags, which come in the regulation shapes. Bags that fool you are new too. They look like little Dutch silver powder boxes when you see them lying on the counter. But there's a little handle in the middle of the box, and when you discover that and pick the box up, you find it is merely a deep top to a silk or velvet bag. The feather bags are just over from Paris.



No. FF-3978
No. FF-3979

HERE is a little idea of mine which, strange to say, is both fashionable and economical. The redingote illustrated above offers a way of converting the suit-skirt into a one-piece dress. It is made of satin, and worn with a tricolette skirt. To carry out successfully the one-piece effect, have the collar, the vest, and the sleeve bands of tricolette to match the skirt. The overblouse of the redingote is made slightly long-waisted. There are darts in the front, and it wrinkles a little below the bust. The peplum gathers to the overblouse, and the waist line is finished with a narrow satin girdle tying in front.

No. FF-3978—Redingote with Gathered Peplum. Sizes, 36 to 44 bust. Pattern, sixteen cents.

No. FF-3979—Two-piece Skirt with Fancy Pockets. Sizes, 26 to 36 waist. Width at lower edge of skirt in size 26, one and five-eighths yards. Pattern, sixteen cents.

The Patterns of the Month

THE skirt, of course, plays the prominent part in making the two very different costumes illustrated on this page. It is a two-piece skirt, and is comfortable to walk in, and yet a fashionable width. The fancy pocket flaps at the sides take away the severe look. When it's an everyday costume that you need, wear this skirt with the blouse pictured below. Crêpe de chine is a good material to select, having it match the skirt in color. Long sleeves are also furnished with this pattern.

No. FF-3980—Blouse with Front Panel and Girdle in One. Sleeves in two lengths. Sizes, 36 to 42 bust. Pattern, sixteen cents.

Send your order to the Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City.



No. FF-3980
No. FF-3979

Feathered Fashions This Season

JUST say feathers, and you describe the smartest of the Paris millinery. Ostrich in solid colors, ostrich in two-tone effects, curled and straight and glycerined. This is the trimming for the newest of the imported hats. And coque is also in demand, as well as hackle, dyed and in the natural color. Hats entirely of pasted feathers are also the vogue, and iridescent colors are preferred. A new little idea to make the ostrich plume fluffier is to combine it with very narrow velvet ribbon in the same length and color as the flues. Rosettes of ostrich and tassels of ostrich are favorite trimmings for the close-fitting hat of velvet.

The new hats are very simple in line, almost all of the brims turn themselves up off the face, so that they are hardly brims at all. And the trimming is on the underneath side. The new place for coque feathers or tiny ostrich tips is to tuck them in at the right side of the hat so that they

fall down over the hair. Many smart hats for everyday wear have trimmings of the same fabric as the hat. For instance, if the hat is velvet the trimming will consist of a spray of velvet leaves or small velvet roses. Some very good-looking hats of velvet or duvetyn are not trimmed at all; the material is simply gathered or shirred in certain places to give a decorative effect.

Fur hats are to be fashionable this winter, and the best-looking ones are composed of two furs. This is a good idea, as in this way you can be sure to match your set of furs or your fur coat. Seal with squirrel is a fashionable combination, and also seal with mole. Squirrel and mole are combined, and mink and seal. Variations of the tam-o'-shanter are prominent among the new shapes. In colors, royal blue, which is a bright dark blue, Chinese blue, rust, mahogany, squirrel gray, and copper are the shades most seen. Much metal lace is used on evening hats.

The Telltale Hand

HAVE you ever thought that the hand is a telltale? Well, it really is, for if you want to know the age of a woman look at her hand. Her face may be fair and smooth and her throat white, but if her hands are withered and wrinkled you are sure to think of her as old. Isn't this a sensible reason for keeping your hands in good condition?

It's really not heavy work that spoils your hands; it is neglect. You can do all the housework you want to, and yet have good-to-look-at hands if you will only take care of them. Be sure that you thoroughly dry your hands. If you have them in water for a long time, they are pretty sure to come out looking shriveled, because the water has absorbed all the natural oil. Now, what you want to do is to give them, right then and there, a little attention. Rub into the hands a good cold cream. Massage well. A cream which has lemon as its base will not only soften the hands, but also whiten them. Then there are special hand creams to be used at night which overcome any impurities that the hands have come in contact with, and lemon juice works wonders too. And there are bleaches that take away redness and roughness, and have a way of fading out freckles and brown spots. Then there is a home-made paste of borax and water, which will remove the brown spots if you only use it faithfully.

Be careful what soap you use. Probably the use of inferior soaps has done more to destroy the beauty of the hand than all the heavy work in the world. If you are not just sure of the soap you are using, give it up, and use in place uncooked oatmeal or bran. Put the oatmeal or the bran in little cheesecloth bags, dip them in the water, and then use them as you would soap. You know it's the free alkali that makes soap bad for the human skin. Now, here's a sure but rather disagreeable way to test soap for alkali: Taste it. If it burns the tip of the tongue it's a sure sign that, no matter how good the soap may be for household use, it's far too strong for your skin.

Here's just a little suggestion, but very worth-while carrying out: Before you start to do any kind of work, such as sweeping, working about the stove, or cleaning, drag your nails over a cake of soap. In this way you will get each nail filled with the soap. This prevents the dirt from getting down under the nails, where it is always so difficult to get out. Of course, you and I know that well-kept nails are an indication of refinement. Never let your nails grow too long. Keep them short and rounded. Every time you dry your hands push back the cuticle around the nail with the towel. This trains it to grow properly. If correctly cared for nails the half-moons must show. Be careful never to have your nails too highly polished.

Inquiries promptly answered.

Some Timely Warnings

DON'T be masculine in your dress. A hen, you know, can't crow very well. Don't imitate in dress. However bad you may look, you will look worse if you try to look like someone else.

Don't, if you are short, wear a too-high hat to give you height. You will look just as short, and out of proportion too.

Don't, if you are tall and thin, wear a very short skirt. You will look as if you were on stilts if you do.

Don't, if you are fat, talk rapidly and incessantly. It will make you look puffy too.

Don't, if you are old, wear a broad velvet band about your neck. Though it may hold up your flabby throat, it gives you a strangled look.

Don't, if you are young and pretty, use paint and powder. You only mar the picture instead of heightening it.

Don't, if you are poor, wear a lot of cheap jewelry. What hasn't any value can't add value.

Don't have a neglected skirt placket. Others can see it if you can't.

Don't wear mussy clothes. The more costly they are the mussier they will look.

The Source and Guardian of Quality

There is in the factories of this Company a section occupied entirely by men whose business it is never to be satisfied with things as they are.

These men, constituting the Development Department, are charged with the creation and improvement of Goodyear products, processes and factory equipment.

Out of their devoted labors have come not only the present excellence of the things Goodyear builds, but the very machinery by which these things are made.

Not the least of their accomplishments has been to deliver to the public a steadily increasing value in these products without proportionate increase in cost.

The present remarkable character of Goodyear Cord Tires for passenger cars continually has reinforcement and benefit from this source and guardian of quality.

Nothing is withheld that intelligence, application and experiment can supply, in the effort to insure that worthiness of product which protects our good name.

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Because Goodyear Tires and the sincere conservation service behind them afford uncommon satisfaction, more people ride on Goodyear Tires than on any other kind.

THE GOODYEAR TIRE & RUBBER COMPANY
Offices Throughout the World



This is an actual photograph taken in one of the laboratories of the Development Department in the Goodyear factories at Akron

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GOODYEAR CORD TIRES

On the Big Grade

Part two of the story of a thrilling chase after a runaway locomotive

By Eugene Jones

Illustration by Leslie Benson

What Happened in Part One

AS I sat in the office of Bowlson, superintendent of the Mountain Division, one evening, there was a commotion in the hall, and Pritchard, engineer of the Limited, was shoved into the room by young Jim Duval. Shirley Winston, idol of the whole division and daughter of the chief dispatcher, had seen Pritchard board his engine and, knowing that he was drunk, realized what might happen to the Limited and screamed. Jim, being near, heard her, understood, and dragged Pritchard from the box and hauled him up to the superintendent's office. Needless to say, Pritchard was fired, and left, mad.

The next day, as I was about to start out on my run, Bowlson sent for me, and said he was worried—Pritchard hadn't turned up for his money, and he was afraid he was up to something. He suggested that I look around and see if I could get track of him when I came in that evening. I did, but was unable to locate him. I saw Jim about to start on his run down behind the Limited and, feeling a bit worried, warned him to look out for Pritchard. Jim was the son of the president of the road, and I knew with what happiness his father watched his work on the road, and what it would mean to him if anything happened to Jim.

After seeing Jim, I wandered over to the chief dispatcher's office for a chat. Men off duty usually dropped in there to get the gossip of the division. Before long the electrifying news came over the wire that number seven-o-seven had just gone through Hillsborough, running wild. Seven-o-seven was Jim's engine. "Pop" Winston tried to order the runaway ditched at the last switch before the big grade, but was too late—it had already gone through. This meant that it would catch the Limited on the grade—a rear-end collision!

The only chance came to me like a flash—the runaway must be caught! I said I would take my engine, which was one of the fastest on the division, and make a try. I called for a fireman to go with me, but none would volunteer. I was so mad at the white-livered apologies for men that I was about to light into them when Shirley's voice called from the door to get ready—she'd find a fireman for me in three minutes.

HOW Shirley could be sure of finding a fireman ready to take such chances was beyond me. All I knew was that the fate of three hundred people, the fate of Jim Duval, and the happiness of a girl I loved as a daughter hung in balance.

Old ninety-nine, the biggest oil burner on the division, had been shunted to the main line. In fact, as I flung myself at the cab steps the drivers turned. I leapt for the throttle, shoving the fireman aside.

"Give it to her!" I yelled. "All she'll take!" Then, as the yard lights slipped past, my eyes rested for a second on the figure in jumpers bending over the oil valves. What the devil—

"Shirley!"

She turned a soot-begrimed face to me. "Yes," she said calmly enough. "Why not? I tried to find a fireman. There wasn't anybody around. To hunt them up would have taken time—"

"But think, girl, the risk!"

She clenched her hands.

"Risk? I love Jim Duval. Don't you understand? What's my life worth without him? If we can't save him, we'll save his memory from disgrace—save those people on the Limited. You go on and drive your engine. Forget a girl's firing for you. Anybody can fire an oil burner. Just remember those poor souls on the Limited—if you care for me, for Jim!"

Never before had an engineer been placed in such a predicament. To stop and hunt up a fireman meant certain disaster on the mountain; by going on I might be

Slowly, ever so slowly, the gap between the two engines closed to eight feet—six—four. Now was the time! Somewhere ahead the Limited again whistled an unintentional warning. . . . I jumped

carrying this woman to her death. It was her life and mine against the Limited, her love and bravery against the fate of Jim Duval. I turned my eyes back to the flowing darkness, and asked the Lord to guard her, the wind whipping the words from my mouth. . . . Shirley firing for me! Shirley sharing the perils of a lone locomotive chasing a runaway on the big grade! What a situation!

When we passed Biltmore we were doing sixty-five miles an hour. At Ardon I could only judge the speed by the rush of wind. Lighted houses leapt out of the void, swam by; freights in the clear echoed the crash of our passing; old ninety-nine swayed, trembling in every fibre, gathered herself in ever-increasing effort and hurtled on, a blacker spot in a black night. While behind me, silhouetted against the glow of the furnace, stood the slim figure of the girl, watching the steam and oil gauges.

Toward us spun the track out of the tunnel of brilliance cast by our headlight. The green of semaphore lamps were passing jewels; now and then I caught a picture of a white face pressed against a tower window. All the division knew! All the division were watching us, praying for us! It was a race against time, a gamble with the Fates controlling that runaway. If the Limited should be held up—I shut my lips and jerked the throttle back the last notch. We were doing eighty miles an hour. The engine rocked, screaming like a live thing on the curves, righting herself with dizzy plunges.

EVEN to me, a veteran, that ride was the most hairbreadth I had ever undertaken. And the dangers were real enough! Once a tardy freight pulled into the clear with her caboose only three hundred feet in front of us. Splitting a switch meant instant death for both Shirley and myself, but delay meant an equally horrible end for the Limited on the mountain. As it was, the runaway had a tremendous start, yet I knew seven-o-seven to be a slow engine. Therein lay our hope. Coal-burning, with a small tender capacity, neither her boiler nor her firebox would long sustain any great speed without a fireman to keep up steam. And there was another danger too—somewhere around a curve we might

find her stalled, whereupon our chances of escaping alive would be about equal to the proverbial snowball.

How much of this the girl comprehended as she stood there over the oil jets, her slim young body braced, her hair flying loose like living flame in the glare of the furnace door, I had no means of telling. Yet surely she realized the odds against us! Surely the same knowledge which enabled her to hold the steam as steady as a rock just under the two hundred mark must have whispered of fearful possibilities!

WAS Jim alive or dead? Was he helpless on the runaway, unable to reach the throttle, or was he lying somewhere behind us by the track? What had become of his fireman? Such were the questions pounding in my brain, pounding to the roar of the drivers. Trestles, cuts, fills, long stretches of glittering right of way whizzed past and were forgotten. Every moment or two the white-striped board of a crossing leaped like a speeding ghost out of the darkness, and I would reach for the whistle cord. We no longer could reckon time; the world became a dark place through which we thundered at a sickening speed, mindful only of what lay ahead. If a semaphore had been set against us, we could not have stopped! The fate of a division was riding that night, and in the balance hung three hundred lives!

Minutes full of thundering sound went by, lengthening like hours of chaos. Shirley's glance never left the gauges. Hendersonville, a white blur, flickered about us for an instant, was gone, lost in our exhaust smoke. At Hillsborough the girl spoke.

"Will we make it?" she asked.

I nodded, praying for the truth of that nod.

Now ahead lay Spartan; I recognized the outlines of the water tank. Beyond that was the beginning of the grade which dropped off easily at one-and-one-half per cent, gradually increasing further down to four. If we were to be of any use we must catch up with the runaway in the next ten minutes. No engineer on earth could curb an eighty-mile speed on the big grade itself.

More pulsing, roaring moments; more shrieking curves; Shirley's tense face, the

tunnel of white light—I shall never forget it! Three minutes left—three short minutes! My eyes searched the unreeling track, seeking the bulk of a locomotive. But there was nothing. Ninety-nine was doing her best, every plate a-quiver, her drivers hardly

touching the rails. Two minutes! . . . One! . . . It was useless. I grabbed for the air—

Then suddenly, out of the night, leaped another shape, growing rapidly. Shirley saw it too.

"Give me the throttle!" she screamed.

For an instant our eyes met, perhaps for the last time. It was a delicate trick—bringing two locomotives together at a seventy-mile speed. The least error in judgment meant utter and instantaneous destruction, yet the girl could never make the jump from one engine to the other. Right then I thanked God I had taught her how to handle a train.

SHE took the throttle as I brushed past her with a word of encouragement and, clinging to the hand rail, I made my way out along the boiler. Through the night came the shriek of a whistle—probably the Limited. Half unconscious from the rush of wind, I hesitated more than once, pressing myself close to the hot plates and away from that void of flowing darkness reaching for me—darkness promising death should I make a misstep. The exhaust from the stack deafened me, the roar of the drivers made my head whirl; yet somehow I must crawl down beneath the smokebox, out on the forward truck, where, God willing, I might cling to the coupling block until the moment to leap arrived.

Behind me was Shirley, and in her hands rested the fate of seven-o-seven and the Limited. The lights of the runaway tender were nearer now. I drew a long, choking breath full of cinders and edged forward. There was a second when my chances of ever reaching that coupling seemed nil—as I swung out from the boiler, one arm around the guard rail, the other groping for the supporting rod of the smokebox. Realities slipped away, phantom shadows reached for me, were gone, revealing nothing, leaving shrieking echoes—my hands found the coupling, and I crouched down.

Slowly, ever so slowly, the gap between the two engines closed to eight feet—six—four. Now was the time! In that gap spun dizzy rails. The rear end of seven-o-seven's tender rocked frightfully. Somewhere ahead the Limited again whistled an unintentional warning. . . . I jumped.

For a brief instant my hands found only air. I was falling! I clawed for a hold, missed, caught the rung of the iron ladder on the runaway's tender and dragged myself to safety. On top of the coal, rolling loosely with the motion of the engine, lay a body. But I crawled across it, slid down between the chains and into the cab. In the distance glimmered two red stars—the tail lights of the Limited. Ninety-nine had already dropped several hundred feet behind. As quickly as I could reach the throttle I shut off steam and applied the brakes. The mass of metal under me shuddered, trembled, yet it seemed doubtful whether or not such tremendous momentum might be overcome in time. Nearer and nearer rushed the last car of the Limited—as if it were actually moving backward. I shut my eyes. . . .

Number seven-o-seven came to a full stop fifty feet from the flagman who had been sent out from the train ahead!

He caught me as I stumbled down the ladder.

"God in heaven!" he muttered.

"Yes," I managed with a sickly grin. "I reckon He is, else that runaway would have gotten you."

After a moment I heard him asking:

"Who's driving the other 'motive?'"

My voice sounded like a croak:

"Shirley Winston."

He merely [CONTINUED ON PAGE 26]

Cornell Wood Board

Takes the Place of Lath and Plaster for Walls, Ceilings and Partitions



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SO fast has the tide of popularity turned to Cornell Wood Board that although we produce millions of feet every week we have not been able to supply enough.

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Place orders with your lumberman far in advance to insure delivery when wanted.

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Cornell comes wrapped in dustproof packages of 10 panels each

Two widths, 32 and 48 inches; eight lengths from 6 to 16 feet





Quality that promotes the utmost continuous performance on rough, rocky, rugged, rutty roads.

Safety that makes treacherous "going" secure at all times, for the Vacuum Cup Tread is guaranteed not to skid on wet, slippery pavements.

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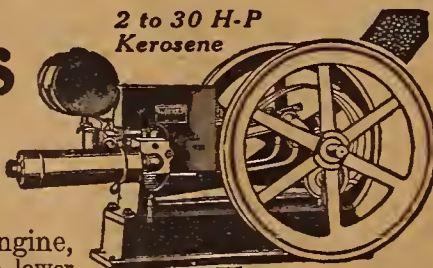
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Any Size

Does the Work
of Ten Men

Self-fed Cattle Profitable

By Vance W. McCray

"I HAVE fed steers on a self-feeder all my life and have never lost a steer," remarked O. R. Myers as he showed me his sleek, prime bullocks which were being weighed before they started on their return trip to Chicago.

Myers lives in Wright County, Iowa, and raises purebred Poland China Hogs, Shorthorn cattle and Percheron horses. His equipment must necessarily be labor-saving or he never would find time in a 16-hour day to do his farm work, and to keep up his correspondence.

"Don't your steers overeat?" I asked.

"No, steers will not overeat when fed on a self-feeder if the ration is properly balanced and the right kind of a feeder used," he replied. "One must use a feeder which does not let the corn flow out too rapidly. My feeders are not open all along the side. They have small openings about three feet apart. This arrangement prevents the corn accumulating where the steers can muss over it. Only about a handful of corn comes out at a time!"

The steers were running in a blue-grass pasture which was knee deep.

"Do the steers go off of feed when you first turn them out on grass?" I inquired.

"I start the steers when the grass is starting, and they do not slack up any on the corn and supplement," Myers answered.

"I always supplement my corn and I am sure I get quicker and cheaper gains by so doing. For the hogs I use meat-meal tankage. For the steers I use molasses feed. I feed it twice a day, and every steer is there every time. The molasses gives the steers a great appetite and a wonderful finish."

When the steers were turned out on grass April 15th they averaged 965 pounds. On August 5th they weighed 1,207 pounds, making an average daily gain of 2.15

pounds. Some feeders claim that you cannot put any gain on a steer during fly season, but Myers gets them fat. When I asked Myers if he liked to summer feed better than to winter feed, he said:

"I believe in doing what the crowd is not doing. There are a great many carloads of cattle fed in this county every year, but I am the only man who summer feeds. For the last two years my neighbors have lost money on their steers while mine were fed at a profit. Three years ago I bought steers for 7½ cents and sold them for 14 cents. That is a far wider margin than I usually get, but I find the margin is always greater on summer-fed stuff than on the other stuff."

THE self-feeder which Myers uses is 16x4x6½ feet, and stands 2½ feet above the ground. The feed trough is 16 inches wide with a 4-inch side. There are five openings on each side of each feeder. Each feeder will hold about 250 bushels of shelled corn. The feeders are built on skids and can be moved from one field to another very easily. It is usually true that where you find purebred stock and improved methods of feeding you will also find other good-farmer characteristics. Myers is no exception to the rule. His sons have an interest in the livestock on the farm. They are 11 and 13 years of age and are showing their stock at the various county fairs. Their father pays expenses and gives the boys what they win. Myers says that this show advertising pays in itself, and that the new ideas which the boys get and the education which it affords them is more than worth the cost.

"The way to keep the boys on the farm is to make farming more interesting to them than anything else," is the way Myers puts it.

Perhaps Joe Lee Has Something for Your Town

By Ethel Armes

IF YOU are planning to put up a new bridge in your district and would be interested in seeing pictures of the various types of bridges, together with blueprints, plans, and cost specifications, you can get them all from Joe Lee's "Town Room," in Boston, without charge excepting postage.

If your village or town needs some new "street furniture," as Joe Lee calls lamp posts, signs, drinking fountains, monuments, or memorial tablets, you can get suggestions from the Town Room.

If your schools are eager to start school gardens and have special exhibits of different kinds, write for descriptions of what other communities have done.

Or, if you are personally interested in learning about public health, home nursing, tree-planting, landscape-gardening, parks and playgrounds, you will find in the Town Room information you want.

When your community is about to build a new railway station, town hall, church, library, or schoolhouse, don't fail to borrow

from the Town Room the picture exhibits, plans, and cost sheets of the different present-day types of these buildings in this country and abroad.

Although Joseph Lee placed the Town Room in Boston—his home town—it is designed to serve all people interested in civic progress. Joe Lee founded the Town Room after studying for twenty years about what was most needed for general community betterment. Now, as president of Community Service (Inc.), the organization succeeding War Camp Community Service, Mr. Lee continues his interest in and support of this center of New England Community life. During the fifteen years of its existence it has become a boon to thousands of people from Oregon to Maine, and to village improvement societies in all sections of the country.

If you want some ideas and suggestions for the celebration of Old Home Week, or any of the above, write to Miss Florence A. Johnson, Town Room, No. 3 Joy Street, Boston, Massachusetts.



This cozy room, known as Joe Lee's "Town Room," is full of information useful to towns which you can obtain free by application

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Call soon on the Columbia dealer nearest you. He will let you test for yourself the wonderful convenience of the exclusive *Columbia Non Set Automatic Stop*. Nothing to move or set or measure. Just start the Grafonola, and it plays and stops itself.

Turn the button which regulates the tone leaves, and hear how complete and accurate is the control they give you over the tone volume. Enjoy the unvarying fidelity of the Grafonola's music. The straight tone arm allows the sound waves to develop fully and naturally.

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Did You Sell Your Bull Before He Had a Chance to Prove Himself?

[CONTINUED FROM PAGE 7]

The problem on hand at that time was to secure a bull to breed to these six females. Pontiac Cronus was chosen by means of his pedigree. He was a son of Hengerveld DeKol, one of the great bulls of the breed. Pontiac Cronus was bred to all the females in the herd, but the problem which is common with all small herds very soon presented itself here.

It was only a comparatively short time before the herd consisted mostly of his own daughters, and his usefulness in the herd came to an end—at least so it was considered at that time. He was sold to a local dairyman, because it did not seem practical to keep him longer. The local dairyman used him only a short time. He did not realize the value of the bull he had bought. He sold him to the butcher. When his daughters in the University herd began to freshen they very soon demonstrated the milk-producing ability they had inherited from their sire. They were "go-getters," but again it was the same old story—Pontiac Cronus had passed on!

Now, anyone will admit, if he stops to think, that the greater the percentage of high-producing daughters a bull has the greater is the breeding ability of that bull. It is the consistency of the breeding that really counts in measuring up a bull's worth. This point is overlooked in many cases. A buyer is blinded by a few high records.

BUT what about Pontiac Cronus? In his comparatively short sojourn in the university herd he sired nine daughters. One of these was sold, and no records are available. Of the eight to come into production in the university herd, four averaged 20,498 pounds of milk and 815 pounds of butter in one year. And these figures represent the average of 50 per cent of the daughters of Pontiac Cronus to come into production in our herd.

The sad thing about it all is that each of these four unfortunate circumstances might have been prevented if we had only known! There are several different means of safeguarding against such losses. Different methods of handling the case will apply under different circumstances. Some one of these methods ought to apply to you.

Some months ago the dairy department of the University of Missouri had a very valuable bull calf dropped in the herd. At that time the herd was headed by Sir Korn-dyke Hengerveld DeKol, and there did not seem to be any immediate need for this young bull calf in the herd. It was deemed wise to offer him for sale. It seemed possible at that time, however, that such an animal might prove very valuable in the university herd at a later date. An unqualified sale would mean that if it seemed desirable to bring him back at a later date it would be necessary to pay whatever price was demanded. This bull had unlimited possibilities as a breeder.

A purchaser was readily found for the calf, and he was sold at a reduced price with a written agreement that after a certain period, if the seller desired the services of this bull, he should have the privilege either of buying him back at the sale price or of securing free and unlimited service for a period of two years. There are many other terms equally as satisfactory. Such a sale applies also to the sale of more mature bulls.

THERE are a number of reasons offered by breeders for not keeping a bull until his worth is known. One is that he is cross or vicious. Such an excuse sounds absurd when there are so many methods of protecting one's self against attack by a bull.

Another, and perhaps the most common, is that it is too much trouble and expense. Let us suppose that it costs \$150 to keep a bull for a year. Now let us assume that a breeder has bought a young bull for a year. Now let us assume that a breeder has bought a young bull on the basis of his pedigree, and used him for a period of from one to two years. We are assuming the purchase of a young bull because a proved sire will bring a fancy price and, as a rule, can hardly be bought at any price. Suppose it will be two years before a bull's worth is known. It would cost not over \$300 to keep him. Who knows but staying

in may mean a "clean-up." How much would have been gained by keeping Pontiac Cronus two years? One calf would have been worth enough to pay the expenses during the entire two years, and would have paid the keep of the bull for another two years—and then some.

But supposing that \$300 looks like a big sum to spend on a chance; there are other ways. You can doubtless find a neighbor who would be glad to secure the services of your bull. You can well afford to allow that neighbor to use your bull free of charge for keeping him. It may mean a small fortune to both of you, provided you choose a

neighbor who will give the bull good care. And if you select a breeder neighbor who will give this bull's daughters a chance, through a test, his gain will be your gain because of the advertising you will get.

Prof. George E. Day, for many years at the Ontario College, Canada, put into effect in this country the plan of leasing bulls. It seemed that a high-bred imported bull was owned by the college, and that it was not desirable to sell him, as he was to be used at a later date. As the college did not have any use for him for a time, it was also considered desirable to allow him to prove himself in someone else's herd. He was therefore leased to a breeder for ten months for about \$125. The first term proved satisfactory to both parties, and was continued. The plan of leasing, according to H. N. King in "Hoard's Dairyman" became wide-spread in Canada, and it is common to see the lease of a well-bred bull advertised for sale.

Of course, it will be necessary for the parties to draw up some form of agreement regarding the use of the bull—the way he shall be handled, and how he shall be disposed of at the expiration of the lease.

Still another possibility is to exchange the service of bulls with another breeder. By looking around you may find that another fellow is about in your circumstances. Why not get together?

There may be glory in being a dead hero, but how much more glorious to be a living one! A proved sire is worth almost anything you care to ask for him. Are you giving your bull, your herd, and yourself a square deal?

Storing Bulbs and Roots

BEFORE freezing weather we take up our tuberous begonias, of which we are very fond, and place the plants, with about one half of the tops left on, in a shed where they are safe from frost but still get plenty of sun and air. As soon as the tops dry they are removed, and the bulbs packed away in shoe boxes filled with clean, dry sawdust, until we are ready to start them the next spring. Tuberous begonias are very tender, and we very carefully get them up before the first hard frost.

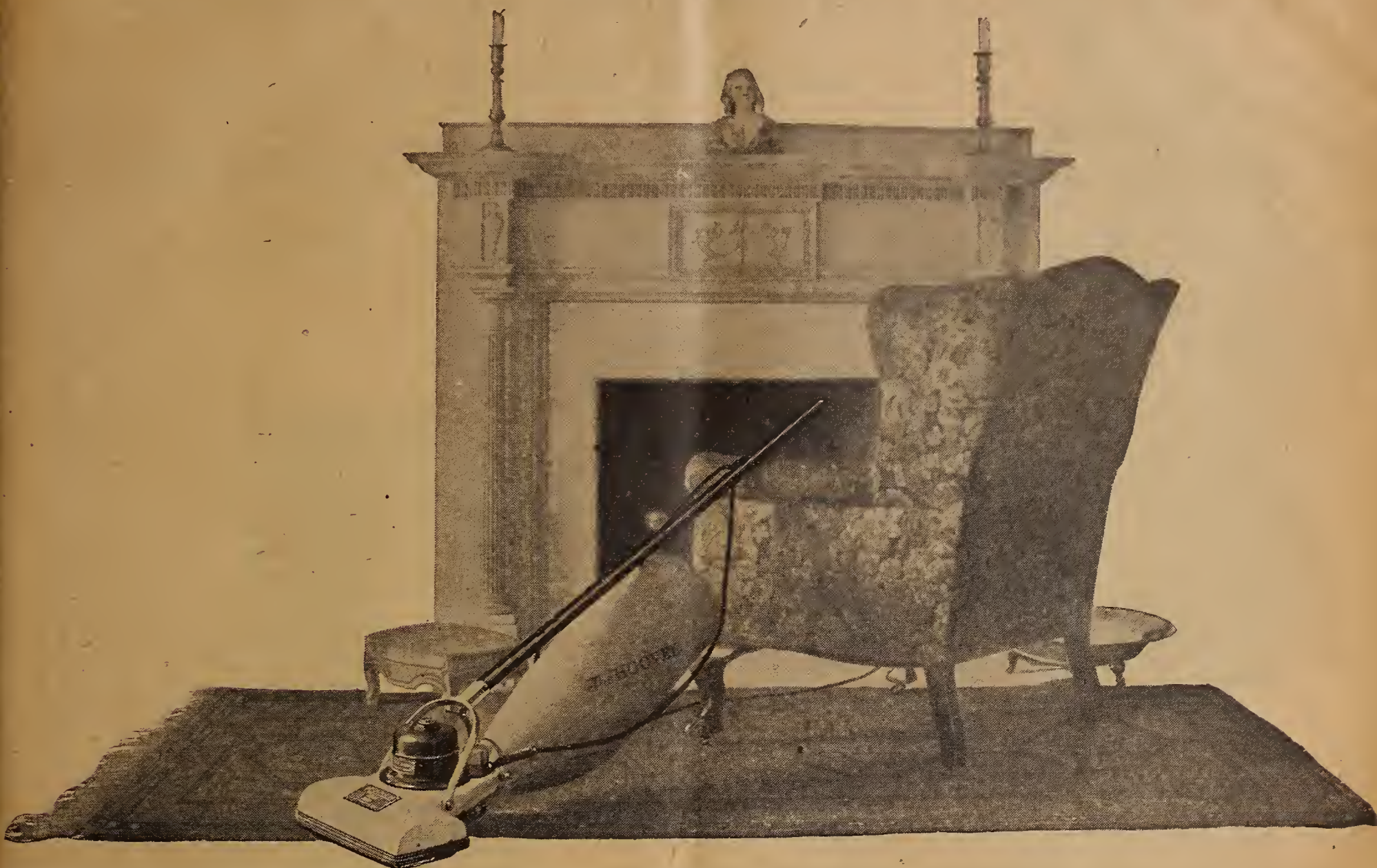
Cannas and dahlias are taken up just after the tops have been blackened by the first frost. The tops are cut off several inches above the ground, and the roots carefully dug so as not to bruise them. Each clump is labeled so that we will know what they are in the spring. After drying a few days in the sun, they are placed in slatted crates so that the air has free access to them, and then stored in the vegetable cellar. We have found that dahlias will not stand quite as low a temperature as potatoes, but they keep all right where the temperature does not go below 34 degrees.

Gladioli are very much hardier. We often have not taken these up until after the first flurries of snow. In digging them we are careful to secure all the little bulblets, or cormels, which have formed around the old bulbs. To save these, the old bulb, with the cluster of little bulblets, is lifted, and put in a screen with a fine mesh bottom, made for the purpose, which will let the dirt sift through while retaining the little bulblets. Each variety is labeled and put separately into strawberry boxes until thoroughly dry, and after that in paper bags until the next spring.

F. F. ROCKWELL.

There are three parties to a farm lease—the tenant, the landlord, and the land. But the land usually has to go unrepresented.

The Hoover lifts the rug from the floor, like this—flutters it upon a cushion of air, gently "beats" out its embedded grit, and so prolongs its life



Clean rugs are the foundation of immaculate surroundings. Constant and proper cleaning will prolong their life of charm. They should be gently beaten, to dislodge embedded grit. They should be carefully swept, to detach all clinging litter. They should be suction-cleaned, to withdraw the loosened dirt. Only The Hoover does all three. And it is the largest selling electric cleaner in the world.

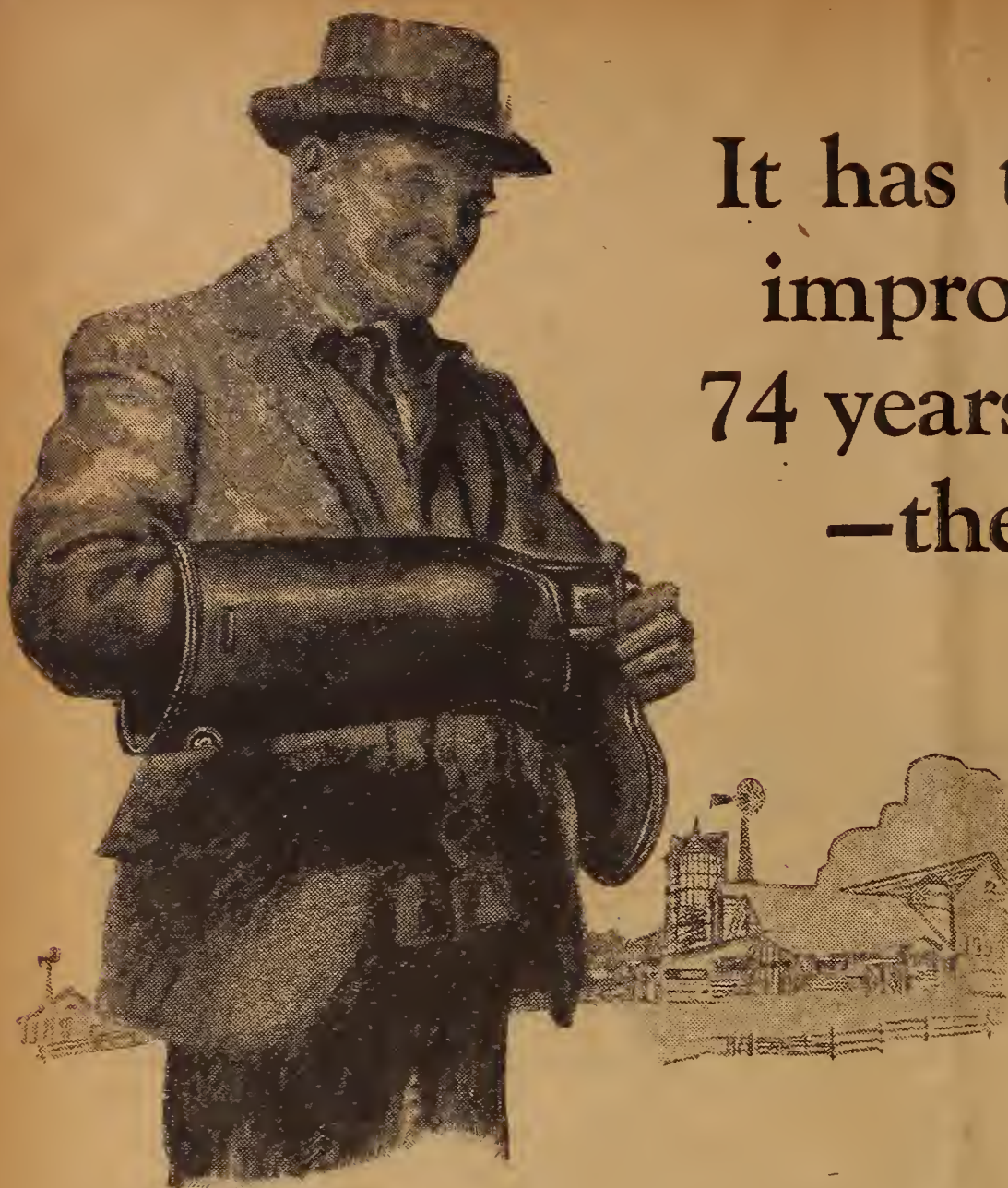
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It has the accumulated improvements of our 74 years of boot-making —the “U.S.” Boot

*A whole line of rubber footwear for farmers—
including the newest types, the “U.S.” Walrus
and the “U.S.” Bootee*

FEVERY year a step forward with some added improvement—a better last, a reinforced heel or an improved process of “curing” the rubber—until today here it is with the accumulated improvements of 74 years—the U. S. Boot. Look it over!

It is trim, well shaped—the sure mark of skilled craftsmanship. It fits snugly and gives maximum comfort—for it is made on most carefully designed lasts. It is long-wearing because it is reinforced where the wear is hardest.

Reinforced where the wear is hardest.

1. The Sole—Five soles in one, all of the finest rubber.
2. Back of the Heel—Every step you take puts a strain on the seam in back. At this point every U. S. Boot is reinforced with *ten thicknesses*.
3. The Toe—Has three heavy layers, a special toe-cap, and an extra sheet of highest quality rubber on the outside.
4. The “bend” in front—A boot has no lacing in front to “give” as you walk. Every step you take, the rubber bends and buckles. Six heavy thicknesses give long wear to U. S. Boots at this point.

The U. S. Boot is built layer by layer carefully and skilfully, then welded into *one solid piece*.

Wear, comfort, appearance—it has them all. That’s why U. S. Boots are worn by farmers everywhere.

The U. S. Boot is just one type in a complete line of rubber footwear to meet every need upon the farm.



*“U. S.” Boots—Reinforced where the wear is
hardest. Made in all sizes and styles—Hip,
Half hip, and Knee. In red, black and white*

A new kind of overshoe for farmers— the "U. S." Walrus

All the warmth and convenience of a cloth-top arctic, as watertight and easily cleaned as a rubber boot—that's the U. S. Walrus.

It's an all-rubber, buckled overshoe that you can slip on and push off in a moment. It has a warm, fleecy lining—and its smooth rubber surface is absolutely watertight. Best of all, you can clean it instantly under a faucet or at the pump while it's still on your feet. It will keep your shoes clean and the house clean, too.

A miner's rubber shoe becoming popular with farmers everywhere

U. S. Bootees give you the protection of a boot with the comfort of a shoe. They slip on over your socks like a leather shoe. You can wear them all day long in the wettest weather—your feet will stay dry and comfortable.

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The U. S. line of footwear has a type for every need—arctics, rubbers, "overs"—all built in the same rugged, reliable way.

They all have tough, heavy soles—special reinforcements at every point where the wear is hardest—and they're made of the highest quality rubber from our own plantations.

Ask your dealer to show you his U. S. line. Pick out the types best suited to the work you do. Every one has been designed by experts—every one is backed by over half a century of experience.

Always look for the U. S. Seal—it means solid wear and long service for your money.



"U. S." Rubbers—A wide range of models, in light and heavy styles to meet every need. Made in all sizes, for men, women, and children

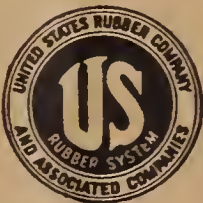
"U. S." Walrus—An overshoe with an all-rubber surface that can be cleaned instantly. Warm as an arctic. Absolutely watertight. All weights and sizes—in red, black and white



"U. S." Bootees—Worn over the sock like a leather shoe. An all-rubber surface—easily washed off. Hy-Bootee, six eyelets; Lo-Bootee, four eyelets. In red, black and white

United States Rubber Company

Look for this seal



on all "U.S." Footwear



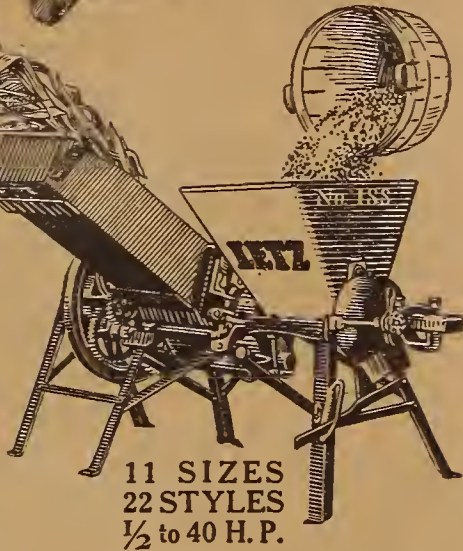
Thousands of Whirling Scissor-Like Edges Cut, Grind and Pulverize the Grain

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These plates have revolutionized feed grinding. They mean double-grinding capacity—cut usual feed costs in half—grind everything grindable—enable farmers to economically grind and mix their own feed instead of buying it ready mixed.

Thousands of keen-cutting, scissor-like edges running in opposite directions, cut, grind, and pulverize to dust in one operation. No other process is so fine-cutting, so light-running, so durable, has such capacity. One set of Letz Plates is guaranteed to outwear three sets of ordinary plates.

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The Letz Dixie Mill above is a heavy-duty, all-purpose grinder of amazing strength, speed, and grinding capacity. Corn fodder, kaffir corn, alfalfa, etc., are fed over the feed table at the same time corn and small stuff is fed into the hopper. All are ground in one simple operation, at half the usual cost in time and fuel. Ask about the Letz DIXIE.



Buy at this "Sign of the Letz" and get dependable grinder service. Displayed by leading dealers everywhere.

costs, increase your profits by using "Letz-ground feed." A Letz Mill for every need—each mill backed by 30 years of experience. Hundreds of thousands of satisfied users attest to Letz supremacy. Investigate!

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On the Big Grade

[CONTINUED FROM PAGE 18]

stared. Then, at length: "Frank O'Kelley, you're clean, stark mad!"

It took me a little while to gather my wits together, but I remember hazily the river of curious passengers which streamed from the Limited and flowed about the two engines, craning necks, asking ridiculous questions, and getting no answers at all beyond a curt order from the conductor to "Clear out and give us a chance!"

Some of the crew climbed aboard the runaway and brought down the body of Jim Duval—the same body I had stumbled over on the tender. His face was haggard in the lantern light, and a bloody spot on the back of his head told its own story, but he woke up almost as soon as he touched the ground.

"I'm all right," he muttered. "Let me alone. . . . Where's Pritchard?"

Then my senses returned sufficiently for me to hurry back to old ninety-nine and the girl who had handled the throttle during those last reeling seconds of the race. They were lifting her from the cab as I got there.

"Fainted," announced a flagman shortly. "Should think she would! Some nerve, I'll say!"

A doctor among the passengers pushed forward and bent over her.

"Nothing serious—" he began when Jim Duval catapulted into the center of the group. For an instant he didn't see who it was; then:

"Shirley, dearest!" His voice held an agony of fear.

HE KNELT beside her, smoothing back her hair, taking her chilled little hands in his.

"Speak to me, dear. Please, please," he whispered.

She opened her eyes, closed them again, but a smile remained. With the help of the conductor Jim carried her to one of the Pullmans. And that was the last I saw of either of them that night.

Only the next morning, when I was summoned to Bowlson's office, did I learn precisely what occurred. As I entered, Jim Duval stepped forward.

"O'Kelley," he began, "there's some things you can't put in words. You understand how I feel, don't you? Every moment of my life—"

"There, there!" I interrupted, giving him a powerful clap on the back. "Miss Shirley deserves the credit; take it out on her. Be good to her, young man, or you'll have to reckon with me!"

"Fate, coincidence, accident—whatever you've a mind to call it—is a funny thing, Jim. All Shirley's life she's been hankering after railroading; that's why the engineers on this division taught her to handle a train. Who ever heard of a girl like her before! Who ever heard of a girl knowing enough about an oil burner to fire it as good as a man on a night run at an eighty-mile speed! Then the way she brought old ninety-nine up to that runaway!—four feet I jumped, no more. A trick for the movies! A matter of cold nerve and—pluck. (I was going to say "love" but thought better of it.) If it hadn't been for Shirley Winston you'd be dead right now, with the Limited ditched on the big grade. Shirley learned your engine had run away. When she couldn't find a fireman for me, she took his place without letting me know. Thank her; don't thank me. Bless her; don't bless me. . . . I was just a doddering old fool ready to take a risk because my time was about up anyway. By the by, how is she this morning?"

"All right. She's suffering from nerve strain, nothing more."

Here Bowlson, in his swivel chair and chewing on his cigar, butted in.

"Well," he snapped, "how about telling O'Kelley what happened to seven-o-seven? There's just a possibility he might be interested, you know."

Jim turned to me with a grin.

"My fault," he said. "I didn't realize you had not heard. There isn't really much to tell. You and Mr. Bowlson were right in being afraid of Pritchard. He tried to kill me and wreck the Limited. . . . When I started down to pick up seventeen I didn't pay much attention to who was firing for me. Supposed, of course, he was my regular partner. Directly we passed Biltmore he jumped on me with a wrench. Before he laid me out I saw it was Pritchard. That's all I remember—his face above me and—sparks!"

Bowlson leaned forward. "Perhaps I can supply the rest. Your regular fireman was found in the yards, knocked out. Pritchard did that first. But when he toppled you over and turned your engine into a runaway he made one mistake; he jumped at the wrong instant—hit a milepost, as near as I can learn. Crew of a freight running extra picked up his dead body this morning. Served him right!"

The superintendent hesitated, glared about fiercely, and rolled his cigar to a more acute angle.

"Now one more thing: What's this all I hear about you and Miss Shirley? Speak up! No side-stepping!"

Jim turned red. "We're going to b-be married," he managed, looking a little scared and blissfully happy.

"Married?" roared Bowlson, "Married without my permission?"

"No," said Duval maliciously, "with it!"

When Jim and I departed we left the little fat man sitting in his swivel chair and scowling wrathfully. But deep down under his sour face, which tolerated nothing even approaching a smile, we knew he would not have had it otherwise.

[THE END]

Thirteen Points to Watch About Your Orchard

IT WOULD be easy to find hundreds of farmers in every State who are making some money out of their fruit, handling it as a side line along with crops, poultry, dairy products, or livestock. Indeed, it would be hard to discover a single neighborhood in which someone has not won a measure of success by such strategy. As a rule, we hear very little about that kind of fruit-growing; it is so much easier to write up the big and spectacular enterprises.

This kind of fruit-growing, however, to achieve its best success, must follow methods different from those of the famous horticultural stars. Boiled down to the fewest words your proposition is about as follows:

1. Begin with the home orchard.
2. From this determine what varieties can be grown successfully.
3. Determine what the local market wants.
4. Plant a relatively long list of varieties, giving due regard to local adaptations.
5. Grow varieties of good quality.
6. Plant enough to make an efficient farm unit, but not to swamp the local market nor to upset the balance of the farm.
7. Give thorough tillage.
8. Use cover crops and barnyard manure, also some intercrops with chemical fertilizer.
9. Spray thoroughly and intelligently, though some of the fine points of the professional may be omitted.
10. Prune cautiously, learning from experts as much as possible.
11. Grade carefully and pack honestly, but pay little attention to the refinements of closed packages for the fancy city markets.
12. Use clean standard packages.
13. Finally, charge a fair price and stick to it; and don't neglect to collect the cash.

FRANK A. WAUGH.





OAKLAND OWNERS REPORT RETURNS OF FROM
18 TO 25 MILES PER GALLON OF GASOLINE
AND FROM 8,000 TO 12,000 MILES ON TIRES



THIS NEW OAKLAND SENSIBLE SIX FOUR DOOR SEDAN IS POWERED WITH THE FAMOUS 44-HORSEPOWER, OVERHEAD-VALVE OAKLAND ENGINE

LET your new car be an Oakland Sensible Six Sedan. For the farmer, as for every other class of citizen, this is the thoroughly practical automobile. It is the most useful car, providing homelike comfort and security in any weather. It is the most sensible car, linking its many advantages to the minimum of operating

cost. The present Oakland Sensible Six Sedan retains the proved high-power and light-weight principle of construction in an even stronger chassis of longer wheelbase. However you judge it, whether by performance, reliability or economy, it affords a value not to be duplicated in any other type of automobile.

OPEN CAR, \$1395; ROADSTER, \$1395; FOUR DOOR SEDAN, \$2065; COUPE, \$2065
F. O. B. PONTIAC, MICHIGAN. ADDITIONAL FOR WIRE WHEEL EQUIPMENT, \$85

OAKLAND MOTOR CAR COMPANY, *Pontiac, Michigan*

OAKLAND
SENSIBLE SIX

Do You Know—



STANDARD PRACTICE

The use of Timken Tapered Roller Bearings at points of hard service in the great majority of automotive vehicles is proof of leadership established on the tapered principle of design, quality of manufacture, performance on the road, and service to the automotive industry.

that the less attention needed to keep your car in condition the greater dividends when you want a binder, thresher, tractor or plow part from town in a hurry?

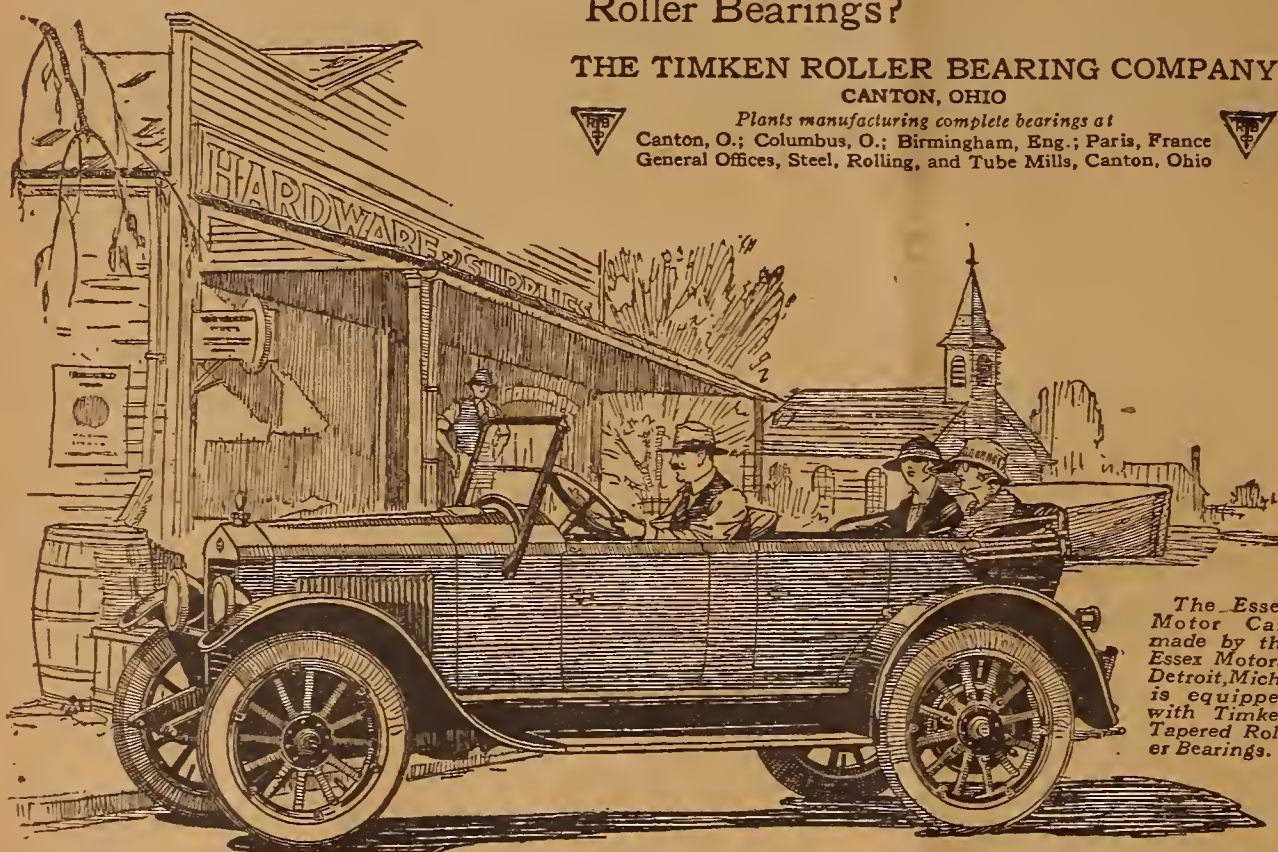
that Timken Tapered Roller Bearings add to car reliability as well as car life, and bring the cost of upkeep down to a minimum?

that no matter what the direction or character of the load, it rolls easily on Timken Bearings?

that when it comes to the tough job, there's just one answer—Timken Tapered Roller Bearings?

THE TIMKEN ROLLER BEARING COMPANY CANTON, OHIO

Plants manufacturing complete bearings at
Canton, O.; Columbus, O.; Birmingham, Eng.; Paris, France
General Offices, Steel, Rolling, and Tube Mills, Canton, Ohio



The Essex Motor Car, made by the Essex Motors, Detroit, Mich., is equipped with Timken Tapered Roller Bearings.

TIMKEN TAPERED ROLLER BEARINGS

It is to your interest to mention Farm and Fireside in answering advertisements.



Remove a stump as quickly as you'd milk a cow!

Dean Johnson, of Netherlands, Missouri, writes:

"Within ten minutes from the time I started work on the first stump I had it out in pieces that I could handle easily, although I had never done any blasting before."

Our book, "Better Farming with Atlas Farm Powder," gave Mr. Johnson all the information that he needed. After reading it you should be able to take out stumps as fast as he did. It also tells how to use Atlas Farm Powder for breaking boulders, planting trees, making ditches, etc. Write for this book NOW.

ATLAS POWDER COMPANY, Division FF15, Philadelphia, Penna.
Dealers everywhere Magazine near you

Atlas Farm Powder
THE SAFEST EXPLOSIVE
The Original Farm Powder

World's Best Roofing

At Factory
Prices

"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Sidings, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made.

Edwards "Reo" Metal Shingles

cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed rot, fire, rust, lightning proof.



LOW PRICED GARAGES
Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles. THE EDWARDS MFG. CO. 1108-1158 Pike St. Cincinnati, O.

Free Roofing Book
Get our wonderfully low prices and free samples. We sell direct to you and save you all in-between dealer's profits. Ask for Book No. 1158.

**FREE
Samples &
Roofing Book**

Are We Blind in One Eye?

[CONTINUED FROM PAGE 5]

80 cents. A rice breakfast food in a 5-ounce package retails for 20 cents or 64 cents a pound. The farmer who grew it got two cents a pound. How did these costs mount so high? The by-products all sell for a good profit.

We must have good food. We should have plenty of it. Why tolerate damaging substitutes in our food? A certain product sold as a milk is prohibited from sale in several States, yet in others it is bought by mothers who feel they must have a cheaper product than good clean, dairy milk. This product has coconut fats in place of butterfat which has been withdrawn and sold and the inferior product substituted. Oleomargarine compares well with it, yet it is being consumed by the thousands of tons. Dr. McCollum's experiment is well known, but one of our county agents, O. H. Chapin of Olean, New York, recently substantiated it. He took two month-old rats and separated them in the cage, feeding one milk and the other oleo and water. The rest of the diet was the same—corn and sunflower feeds. At the end of two months one was sleek and fat, while the one eating a substitute for butterfat was about where he was when the experiment began. Unfortunately for our health as a nation we continue to feed the children with foods we have proven are dwarfing. How much of the nation's ill health is due to the fact that someone has selfishly adulterated the food supply and tempted its purchase by specious argument that it was "just as good"?

GOOD food will, of course, cost money. It's worth it. It will probably cost more than it does now. How, pray tell, can it be otherwise? When the railroad laborer gets a hundred per cent increase in pay he must recall that it must come from the earnings of the roads which must be reflected in the traffic rates, which in turn must be added to his foodstuffs which the roads are hauling. Don't be fooled, there is but one way to have goods, namely produce them. If you want them cheap, produce plenty. Short days, big pay, low production, all point one way. Of this there seems to be a certain harvest; namely, that wages upon the farms will climb as they go up in shops and factories. Only natural. This means that if wages are the same for like work, then when hours increase pay will increase. If time is doubled, pay will be doubled. The man who works eight hours must naturally expect that the man who works sixteen will get at least twice as much.

The farmer is about at the end of complaint as to the length of time a man works. He may work eight hours or nine hours or ten hours, or not at all as he can afford; but he may be certain that he will pay enough for the products of the labor of the man who chooses to toil longer to give him a proportionate wage. I can see but one certain and inevitable harvest for the trend of affairs: if the laborer in the shop gets \$5 per day of seven hours, and his farmer brother works fourteen, food prices must supply enough to pay a \$10 wage to the man who chooses to work the longer time.

The farms are the certain source of supplies. A Detroit visitor visiting Tulsa, Oklahoma, asked:

"But what will you do when the oil fails?"

The Tulsa auditor replied:

"And what will Detroit do when the oil fails?"

WHILE it will be bad enough to lose the natural rock oils, yet alcohol can be made from farm products in many ways, from potatoes, straw, stalks, grain, and many by-products from the farms.

The statements made in this article are not made in a spirit of cant nor yet of mere criticism, but with a sincere motive to encourage a study of facts as related to the health, prosperity, and happiness of the nation. We are drifting toward a certain harvest. The divine declaration, "Whatsoever a man soweth, that shall he also reap," has been too oft demonstrated to any thinking man to require proof. Certain it is that in the readjustment of the equities of labor and wages we are going to reap a sure harvest.

The fair-minded American public can be depended upon to do the right when the right is understood. We are not going to eat grapes from thorns or figs from thistles, and the sooner the facts are seen and understood the sooner and more surely will we avert the bitter harvest which awaits the stupidly blind.



E. J. SWEENEY
President Sweeney School

Make Money Doing the Work You Really Like

THE WHOLE QUESTION IS:

—ARE YOU MECHANICALLY INCLINED?

I don't care what you make as a carpenter, or farmer, or day laborer, as a lawyer, banker or merchant. I don't care what temporary inducements can be made you to work at some job you are really not fitted for.

I say that SUCCESS consists in doing the thing you like—the work that appeals to you.

—ARE YOU A MISFIT?

There are thousands upon thousands of misfits. They may do all right today but tomorrow they will drop out.

I Preach Doing the Things You Like to Do

Now, I say if you have a natural mechanical inclination it is YOUR REAL JOB—the thing that will pay you better than anything else.

If you don't mind grease on your hands; if you like to handle tools; if you like engines; if you like automobiles; if you like the joy of creating things with your own hands—then, JUST AS QUICK AS YOU CAN MOVE, train yourself for that business.

If you are mechanically inclined, EVERY DAY THAT YOU STAY AWAY FROM THE SWEENEY SCHOOL you are wasting time.

They may say you can make more money right now, this month, doing something else. They may say you are needed here or there doing something else. You may think up yourself a lot of excuses to postpone coming here. BUT IF YOU HONESTLY MEAN TO BE A REAL SUCCESS, don't postpone, don't hesitate, don't kid yourself. Get on a train and come to the Million-Dollar Training School.

Big Money If—

You know dozens of men, probably—and I know thousands of men—who have made and are making FORTUNES out of the automobile business.

Some in owning garages, some in tires, some owning auto agencies, some as tractor men, some as manufacturers. Opportunities branch out like limbs from the tree. The tree is MECHANICAL TRAINING.

Here is a letter today from Bill Jones of Hutchinson, Kan. Bill was one of my students. He says: "I am running a tractor here for Tom Withroder and Joe Stuckey at Sylvia, Kan., for \$20 a day. This is the most money for an engineer ever paid in Kansas. I sure tell it to them, and when they see me sit in the shade and draw \$20 a day, they get Sweeney fever."

I don't know what the limit is. I personally am still a young man and I started a few years ago and have made myself a millionaire. I DID THE WORK I LIKED. If you are mechanically inclined, EVERY DAY YOU PUT OFF COMING TO ME YOU ARE CHEATING YOURSELF. Can you afford to do this?

I want 1,000 men right now to train for big paying mechanical jobs. Never was there such a demand. But the demand is for Sweeney trained men—not misfits. There is a limit to the number of men I can train. I won't take more than I can handle. Men are lots of times surprised to find they can't get in here. IF YOU WANT TO BE SURE of getting in, better not delay. LAST WINTER I SENT BACK MANY MEN. This may surprise you, but it is a fact. So I say: If you are in earnest, don't let anything delay you—COME TODAY.

The Secret of the SWEENEY SYSTEM

The famous Sweeney System consists of teaching men by practical experience on real automobiles, engines, tractors, etc., working with their own hands, to make and repair engines, tractors, tires, batteries, aviation engines, etc. It has cost me over \$350,000 to provide the NEW AND UP-TO-DATE material for these men to work on. But the system is so simple that a deaf and dumb student, Joel Fiatt, went through in 8 weeks and is a successful mechanic. This is the school that is ENDORSED BY ITS GRADUATES. The majority of our men

I guarantee to refund every cent of your railroad fare going and coming if you find one SINGLE MISREPRESENTATION.

You Be the Judge

Come here and go through this great big school—really a city of shops, as Barney Oldfield described it.

Talk to the men at work. Talk to the instructors. See the equipment with your own eyes. YOU BE THE JUDGE.

You take no risk by jumping on a train RIGHT NOW. But you are RISKING your whole future if you delay—if you don't come.

If you want to be a lawyer, doctor, preacher, GO SOME PLACE ELSE. Don't be a mechanic. Don't be a misfit. But if you believe as I do that the MECHANICALLY TRAINED MAN IS THE BOSS OF CREATION, then step quick. Come to Sweeney today. BE A SWEENEY TRAINED MECHANIC and a real success in life.

Write Me—"I'm Coming"

There are 8 million automobiles in this country. How many millions of tractors, gas engines, tire repair places, tire factories, etc., I don't know. I DO KNOW THE AUTOMOTIVE INDUSTRY is the biggest and fastest-growing business in the world. If you like the work you are certainly in a live business. The big money—prosperity and contentment, too—is awaiting you. Write me today: "I'm coming." I will be ready for you; class assigned, tools awaiting you, room and board fixed up for you. Be sure and send for my free 72-page Catalog today—it's the most interesting book you ever read—simply send name.

Get This Big Free Catalog

EMORY J. SWEENEY, President
841 Sweeney Bldg., Kansas City, Mo.

Send me free your 72-page catalog and Sweeney School News and tell me of the opportunities in the auto and tractor business.

Name.....

Address.....

I'm Coming.....

FACTS ABOUT THE SWEENEY SCHOOL

Over 187 acres shop and operating space.

Over ONE MILLION DOLLARS invested.

Equipment alone worth over \$350,000 of which \$50,000 machine shop and aviation equipment has just been purchased.

Over 1,200 students and 35,000 graduates. 250 instructors and employees; monthly pay roll \$30,000.

come right here without a lot of letter writing; as the result of the advice of some successful friend who has been a SWEENEY trained man.

If you are mechanically inclined, quit fooling, drop everything else and come right along.

Start in Right Now

If you are not mechanically inclined, drop it. Don't waste your time and mine. If you would rather be a lawyer or bookkeeper, all right. I teach with tools, not books. If you are a book man, stick to books. If the automobile, tractor, aviation, mechanical business generally, appeals to you, THAT IS YOUR REAL LINE OF WORK.

Don't waste another hour. Make the first step toward success. Come to the SWEENEY SCHOOL TODAY. Train yourself to be an efficient, first-class mechanic.

Thousands of you men have been reading my advertisements and trying to decide whether or not you will take up AUTOMOTIVE ENGINEERING.

Thousands of you INTEND TO COME, but you keep putting off the first step. You know all about this school and what it has done for over 35,000 men and what it can do for you.

YES, SIR; there is money—big money—in the automobile business, provided you are a SWEENEY trained man.

Look at the picture in the upper left hand corner. Meet me face to face as you will when you come here. Then look at the lower right hand corner. See the picture of the greatest trade school in the world. Just look at this building—one of the show places of Kansas City. Now that's my whole

story. THE SWEENEY SYSTEM which you can get ONLY in that Million-Dollar Sweeney School.

I could write pages, but here, condensed, is the whole argument. If you are a Sweeney trained man, you will be a success in life, because here the young man mechanically inclined is taught by PRACTICAL EXPERIENCE to be a master mechanic. If you are mechanically inclined and DO ANYTHING ELSE you are a MISFIT and sooner or later will have to drop out.



Here is the
World's Famous
Million-Dollar
Trade
School

SAVE \$50 NOW ON A LIFE SCHOLARSHIP

LEARN A TRADE
Sweeney
SCHOOL OF AUTO-TRACTOR-AVIATION
841 SWEENEY BLDG. KANSAS CITY, MO.

The Sweeney School is a Government approved school recognized first by U. S. Government during the war for the training of over 5,000 army mechanics.

—by the Farmers of America!

THE degree of Useful Permanence which shall be the life of the International Harvester Company—the Future and the Success of this organization of farm machine builders—is being decided season after season by the farmers of America.

On millions of farms from coast to coast, men who are served by the products of this Company are masters of the situation. Other influences from time to time may help or hinder the work of the Company but these men hold the control in the palms of their busy hands.

As they by their purchases place the seal of approval on the good workmanship and good working of the farm machines in the International Line, so will the International Harvester Company advance into still greater usefulness.

To retain and to continue deserving the present goodwill of American farmers is and must be the constant endeavor of this Company.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA
CHICAGO (INCORPORATED) USA

How Much Corn Does Your Crib Hold?

MANY farmers complain that their corncribs will not hold the manufacturer's rating. If this is true—and it is—there must be either misrepresentation or misinterpretation somewhere. The latter is probably the case. Crib are usually rated in terms of volumetric bushels—that is, they will contain so many Winchester bushels of 2,150.42 cubic inches each. The capacity of a crib in bushels is then determined by dividing its volume in cubic inches by 2,150.42. But this does not mean that it will hold this number of bushels of ear corn, or that the ear corn in it will shell out this number of bushels.

In order to get some idea as to what a crib can be expected to hold in terms of shelled corn, the following experiment was performed at Ohio State University: A large box was filled with yellow dent ear corn and shaken to compactness. The volume of the box by inside measurements was found to be 19,546.9 cubic inches. Then, by the above method, its capacity was recorded as 9.09 bushels. The weight of the corn in the box was next determined. By dividing this weight by 70 pounds, 4.2 bushels of ear corn (by weight) were obtained. So while the box contained 9.09 bushels by volume, yet it only contained 4.2 bushels by weight. The latter figure is the important one, since corn is sold by weight. Going farther, the shelling percentage was determined, and from it the weight of shelled corn was computed. Dividing this weight by 56, the legal weight per bushel of shelled corn, 4.3 bushels were procured.

Thus it required 9.09 bushels of ear corn by volume to make 4.3 bushels of shelled corn by weight, or a ratio of 2.1 to 1. Practical use can be made of this ratio. It offers a check upon a given rating of any crib. To find how many bushels of shelled corn can be obtained from a given crib when it is filled with ear corn, find the volume of the crib in cubic inches, then divide by 2,150.42, and then divide again by 2.1.

HAROLD P. TWITCHELL.

Our Experience With Goats

I BELIEVE that milk goats will some day come into more common use in America, especially in the smaller towns. We have had a few goats for about five years and they have been profitable. They are of the Toggenburg breed and are fine animals. Goats are not difficult to raise and are easier to keep than sheep, for they require a smaller amount of feed. I believe that a great many families in the country villages could easily keep a goat or two, and thus get a supply of milk and cream.

Our goats produce, on the average, two quarts of milk a day each, testing from 2.3 to 4.5 per cent. It is pure white—even whiter than cows' milk. Goats' milk often has an objectionable odor and is then not good for table use. But we have found that when handled in a cleanly manner the milk has no bad odor and can be used the same as cows' milk. We have made good cheese from goats' milk, but have not found it very satisfactory for butter production. There are some farmers who have produced goats' milk at the cost of about eight cents a gallon, and who say that goats are as profitable as cows. I do not believe, however, that the average American goat is as profitable as the high-grade American cow.

Goat milk, being very nutritive and easily digested, is good for babies and invalids. In experiments at Buffalo, New York, goats' milk was fed to eighteen children who were not doing well on other foods. All thrived on the goat milk, and six showed a very great improvement. We have sold some goat milk to a hospital at a good price. But we use most of our milk for putting into the coffee and for drinking, and the rest we manufacture into cheese. One good thing about goats is that they are immune to tuberculosis. They are not immune, but they do not contract the disease unless they are exposed to it for a long time. Very few goats have tuberculosis.

The principal breeds of milk goats are the Nubian, Saanen, Toggenburg, and the common American goat. We have found the Toggenburg a satisfactory breed and a good milker. Purebred milking does are not too plentiful, and the best way for the average person to get a standard herd is to breed up by using a purebred buck of a known milking type.

CHARLES OLIVE, Minneapolis.

THERE ARE 92 INTERNATIONAL BRANCH HOUSES, SERVING OVER 15,000 DEALERS, SO THAT YOU MAY BE SERVED PROMPTLY WITH MACHINES, BINDER TWINE AND REPAIRS

The Full Line of
INTERNATIONAL HARVESTER
McCORMICK DEERING
Farm Operating Equipment
Motor Trucks
Tractors
Engines

DEALERS, IN CONVENIENT REACH OF EVERY FARM, SELL INTERNATIONAL MACHINES AND STAND BACK OF YOUR PURCHASES WITH INTERNATIONAL SERVICE

SEND NO MONEY SEE BEFORE YOU BUY

6000 Miles Guaranteed Inner Tube FREE

Look at These
Real Values

New Casings	Price	Tube
30x3 Ribbed	\$9.00	FREE
30x3 Non-skid	9.50	FREE
30x3½ Ribbed	10.50	FREE
30x3½ Non-skid	11.50	FREE
31x3½ Non-S Oversize for 30x3½	13.50	FREE

Sent at Our
Risk, Not Yours

Shipment same day order is received.

Standard make NEW tires built by the manufacturers to give 6000 miles or more of service and free standard make inner tube with each tire ordered.

The greatest tire sale in tire bargains, values which cannot be duplicated, sent to you for your examination. Tires must satisfy you absolutely. If not, return them; we pay charges both ways.

Don't confuse these tires with the so-called slightly used, double-tread, rebuilt or resoled kind.

State whether you want a ribbed or non-skid tire. Send no money. Just send your order and you can examine the tire before you pay for it. We allow a special discount of 5 per cent if you send full amount with order. Remember, all amounts will be refunded immediately if on examination tires are not satisfactory. Whatever you do—order TODAY. References: Madison & Kedzie State Bank.

GARFIELD TIRE AND TUBE COMPANY, Dept. 139, 3935 Washington Blvd., Chicago, Ill.

Farm Land Values Not a Thing of the Past

Why did farm land values during late war conditions increase from 200 to 400 percent? Undoubtedly because of the high price of agricultural commodities, chiefly. Since in the main only the most productive of those lands situated in the vicinity of the larger centers of population and transportation facilities were wholly those affected, good land at reasonable prices may still be had along the Nashville, Chattanooga & St. Louis Railway in Kentucky, Tennessee, Alabama and Georgia that will produce per acre, per year, from 4 to 6 tons alfalfa, 30 to 40 bushels wheat, 12 to 20 barrels corn, 80 to 100 bushels oats, clover, pea and other hays in proportion, and \$10 to \$20 per month per cow; and other lands that will produce profitable crops at from \$5 to \$20 per acre.

For descriptive literature address L. P. Bellah, General Agent, Department B, Nashville, Chattanooga & St. Louis Railway, Nashville, Tenn.

Ways That Will Save Hours and Dollars for You

[CONTINUED FROM PAGE 13]

arranged on a larger sheet according to seasonal use and to fit the proposed width of shed. The length of building may then be determined. If a quarter of an inch represents one foot, the miniature floor spaces will be quite easy to handle. A seven-foot cut binder requires a floor space 9x13 feet when mounted on a transport truck. Reduced to our scale, it would be represented by a slip of paper $2\frac{1}{4} \times 3\frac{1}{4}$ inches. Other machines would be reduced in the same proportion. Walking plows, smoothing harrows, etc., may be hung on pegs or stored in space left between odd-shaped pieces.

A space 12x16 feet will be large enough for a small workshop. The equipment of this shop may consist of a workbench, a good iron vise, either a post or bench drill, or both, a small forge, an anvil, the necessary hammers, tongs, pliers, and other tools. A supply of plow bolts, knife sections, and ledger plates for mower and binder, and other minor parts subject to loss or excessive wear, will save many precious hours.

We find that the oil drained from the automobile crank case is excellent for coating plowshares, cultivator shovels, knife bars, and similar parts. The oil is applied with a brush.

In putting machinery away it is quite a simple matter to clean off mud and dust, and to cut away weeds that are wound on shafts or in bearings.

DURING winter, when other work is slack, each machine may be taken in turn and overhauled. Bearings may be taken up or rebabbitted. Knives may be ground, loose bolts and rivets tightened, paint may be applied to all open parts subject to rust or decay. With a little care the handy man can do many little tasks at the forge, such as sharpening steel plowshares.

There is a valuable book for the man who cares to know something more about his equipment. This book, "Equipment for the Farm and Farmstead," was written by Mr. H. E. Ramsower, a practical farmer, and is published by Ginn & Co., Boston, Massachusetts.

Other useful literature may be secured free from the United States Department of Agriculture. The following bulletins are of particular interest:

Care and Repair of Farm Implements No. 3. (Farmers' Bulletin 946.)

Care and Repair of Farm Implements No. 4. (Farmers' Bulletin 947.)

How Engineering May Help Farm Life. (Separate 660 from the Year Book 1915.)

The following publications are for sale by the Superintendent of Documents, Government Printing Office, Washington, D. C.:

Corn Harvesting Machinery. (Farmers' Bulletin 303. Price, 5 cents.)

Repair of Farm Equipment. (Farmers' Bulletin 347. Price, 5 cents.)

In conclusion, let me suggest that if we worried a little more about the high cost of wasting machinery we should worry much less about the high cost of new machinery. I believe we actually waste half of the total farm machinery manufactured, if not more. Mechanical equipment must take the place of man labor more and more, and we might as well decide to care for that equipment with the same loving care that we used to bestow on our fast "sparkin' hoss."

When Bill Nye Sold His Cow

BILL NYE the humorist once had a cow he wanted to sell, and he unblushingly advertised all her faults while naming the few virtues she seems to have possessed. His advertisement ran:

"Owing to my ill health, I will sell at my residence in township 19, range 18, according to the Government's survey, one plush raspberry cow, age eight years. She is of undoubted courage and gives milk frequently. To the man who does not fear death in any form, she would be a great boon. She is very much attached to her present home with a stay chain, but she will be sold to anyone who will agree to treat her right. She is one-fourth Short-horn and three-quarters hyena. I will also throw in a double-barrel shotgun, which goes with her. In May she usually goes away for a week or two, and returns with a tall red calf with wobbly legs. Her name is Rose. I would rather sell her to a non-resident, the farther away the better."

"The fruitful season now is o'er,
The Autumn has resigned her store,
Ungrateful man to feed.
How rich the bounty heaven bestows!
To us unbounded goodness flows
In every time of need."

From "The Farmer's Almanac" November, 1828



LEE Puncture Proof Cord Tire



LEE tires
smile
at miles

THAT'S the big idea—"unbounded goodness—in every time of need"—back of every Lee Puncture-proof tire.

It's what you're looking for—what we've succeeded in producing—a pneumatic tire that delivers 100% of service "in every time of need."

When the way is straight and smooth—when motoring conditions are ideal—any ordinarily good tire will carry you.

But, the way is not always smooth. A sharp stone, a splinter of glass, a tack or nail, even on the smoothest road, is a menace to any pneumatic tire but the Lee Puncture-proof.

And it isn't so much the work and bother and delay of tire-changing, that affects your pocketbook. It's the actual mileage-lessening damage to the carcass of your tire by running "soft" or "flat."

The Lee Puncture-proof tire carries a cash refund guarantee against puncture.

It eliminates the driver's biggest bugbear.

Now, when farm products must be hauled to market over roads that are none too secure, is the time when light or medium capacity farm trucks need Lee Puncture-proof pneumatic equipment.

Lee Puncture-proof tires come in either "Cord" or "Fabric" construction—the former for heavy passenger car, the latter for light truck service.

Any Lee dealer—and there are Lee representatives everywhere—will analyze your tire service conditions, and furnish the Lee tires best suited to your needs.



Section showing
LEE
Puncture-proof
construction

LEE TIRE & RUBBER CO.
Executive Offices — 245 West 55th Street
NEW YORK CITY

FACTORIES CONSHOHOCKEN PA.



"Yow! — * — ! What do you think you're running — a fire engine? ! — * !! You —"

"Easy there, Old Bird! Your car is only scratched. Just touch it up with a little black Effecto and forget it!"

It is a fact, after the fray of battle, when you have quickly and easily brushed a nice smooth coat of Effecto on the damaged spots, that these minor mishaps don't look so bad at all. And then you begin to realize that Effecto will do for the whole car even more than it can do for a few scratches and mars.

It takes but a few hours of interesting work, a few dollars for Effecto and 24 to 48 hours for drying, to transform an old weather-beaten car.

Effecto is the genuine, original auto enamel, made in Black, Blue, Green, Red, Brown, Yellow, Gray, Cream

Effecto
AUTO
FINISHES

and White; also clear Finishing varnish and Top & Seat Dressing.

Don't confuse Effecto with the many polishes, waxes and similar preparations. Effecto Auto Enamels produce a smooth, weatherproof coating, which is more durable and lasting than the finish put on new cars by most manufacturers.

Effecto is sold by paint, hardware and accessory dealers everywhere.

Send for Color Card and Name of Local Dealer

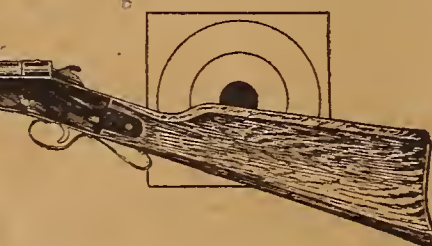
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169 Tonawanda St., Buffalo, N. Y.
Canadian Address:
115 Courtwright St., Bridgeburg, Ontario

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Earn this dandy
RIFLE
and membership
in
DAN BOONE'S
RIFLE CLUB

Costs you nothing
but a few hours
easy work



Think of it! for a few hours' work after school or on Saturday you can earn this .22 caliber hunting rifle, with automatic shell ejector, safety catch, accurate sights, detachable barrel, etc. A real bullet-shooting, bull's-eye-hitting rifle.

And with this rifle, we give you a full membership in Dan Boone's Rifle Club—a new national shooting club for boys. No dues, no payments to make.

You get the Dan Boone Pin to wear, so that every boy in your neighborhood will know that you are a member. And you may well be proud, too, for you remember the story of Dan Boone, that famous trapper—fearless of all

danger with his steady aim and faithful gun.

The Dan Boone pin on your coat means that you want to be manly, observant, self-controlled at all times, and to be able to shoot like old Dan Boone himself—quick—steady—sure!

With this accurate target shooting rifle, you can soon earn the right to wear the beautiful Dan Boone bronze medals for excellence in shooting: Marksman, Sharpshooter or Expert Rifleman.

Send us your name and address today, and we will tell you all about our easy plan to earn this wonderful rifle, and the membership in Dan Boone's Rifle Club. Write at once to



DAVID BLAIR, National Secretary, Dept. 125

157 West High St.

DAN BOONE'S RIFLE CLUB

Springfield, Ohio

Purebreds Will Pay You, But Not With Scrub Methods

By Ford S. Prince

County Agent, Greene County, Ohio

"GIVE it up," said a farmer to me the other day, "my hogs and cattle are not paying me. I must get some purebred stock."

I glanced at the hogs in a dusty pen, and at the skinny cattle which were trying to secure a subsistence in a midsummer pasture too bare to hide a cricket. Finally I shook my head and said:

"My friend, I am going to be frank with you. I do not believe it will pay you to put money into purebred stock until you change your methods. This thing of trying to grow hogs on corn alone is out of date. Pasturing grass off so closely that your cattle cannot maintain their flesh through fly time is also bad policy. It would be the same if you had purebreds, unless you change your practice. Better livestock will not help you. They will only make it worse, because your initial cost will be greater."

Then I mentioned several examples of successful livestock men in his own community and suggested that he visit these men for the purpose of studying their methods.

I was traveling through central Michigan a few weeks ago with my brother, who is a livestock dealer. We stopped to talk with a farmer who had about twenty-five steers and heifers in his pasture. The colors of these cattle were as varied as Joseph's coat. It was a motley herd. My brother tried to buy two of the better steers, and his attempts brought out the following remarks from the farmer:

"Boys," he said, "when I sell any of those cattle, I'm going to sell them all. Fact is, I haven't got cattle. I just have yellow dogs. I returned a few days ago from the West, where I saw some real cattle, and I am determined to dispose of my entire herd and start in right."

"I feed my cattle well," he continued, "but they never have paid me any real profit. I realize now why they have been of no benefit to me. I have been trying to grow beef with this herd of cattle which has no breeding whatsoever, and it can't be done."

Now here was a man who had caught the real vision. He will probably make good on his cheap land raising beef cattle of good breeding.

THESE two illustrations serve to emphasize the point I am trying to make; namely, some men cannot make a decent profit on their stock because of themselves; others cannot, because of their stock. On the other hand, a good many farmers are doing well with grade stock and some are failing with purebreds. But on the average the men who are keeping purebred stock in the Corn Belt are the men who are making the most money.

I base this last statement on a survey made in Greene County, Ohio, in 1919, in which figures were taken of the entire farm business for a year on 73 farms. Only a half dozen purebred specialists were included in the survey, so that the figures here presented represent a fair average as to what we can expect under similar farming conditions:

Group	73 farms	Returns per 100 feed	Feed cost per animal unit*	Returns per animal unit	% farms keeping purebred stock
1	Low returns 25 farms	99	139	126	16
2	Fair returns 24 farms	119	126	150	25
3	High returns 24 farms	117	101	179	46

*Animal unit, a cow or her equivalent in amount of feed consumed.

It is thus seen that the men in the "low returns" group just lacked one dollar of getting paid for the feed their animals consumed. The men in the "high returns" group are receiving a good profit from their feeding enterprise. Note also that the feed cost per animal unit is greater in Group 1 than in any other group. This would suggest that these farmers are feed-

ing heavily, but using a poor ration. (See next table.)

There were only four farms in Group 1 keeping purebred livestock, while eleven of the men in Group 3 were working with purebreds. From the figures at hand we tried to explain why the feed cost per animal in Group 1 was the heaviest of all. The following figures are the result:

Group	73 farms	% total feed fed corn	% of total hay fed alfalfa	% made on total investment
1	Low returns 25 farms	64	12	12
2	Fair returns 24 farms	60	22	13
3	High returns 24 farms	46	54	16

The results of poor and good feeding are here illustrated. In the Corn Belt the easiest and handiest thing to feed is corn. In Group 1, 64 per cent of the total value of the feed fed was made up of corn. This apparently overbalanced the ration in that

direction, judged by the financial returns. The men who were buying tankage and other high-protein concentrates were using good business judgment. The men in Group 3 not only have the best stock, but they are using the best feeding methods. This is further borne out by the hay ration, for in Group 3, 54 per cent of the hay fed was alfalfa, while in Group 1 only 12 per cent of the hay was of this excellent forage.

The per cent made on the total investment represents the returns for the whole farming business. But as most of the farm crops, except wheat, are marketed through the livestock, this gives us an idea of the profits the men in Group 3 are receiving over those in the other groups.

In figuring the interest on the investment we took out the total expenses, including \$700 for the operator's labor, from the total farm receipts and then figured the percentage. The men in this survey had been picked as efficient farmers.

Now what do these figures teach us? They prove rather conclusively that it pays to keep purebred stock. They also show that the livestock is no more a limiting factor than the methods of the men handling them. We all believe in better livestock. But better livestock without better methods is bound to fail.

If our livestock are not paying good profits there is something wrong. But often the trouble is with the quality of the methods rather than the quality of the live stock. If the difficulty is with the livestock, it can be easily remedied. If it is with ourselves, it may be a harder proposition.

Toning Up Backward Pigs

IN SPITE of the best of care many fall pigs will emerge from the winter looking pretty sorry. Often they will be shaggy-haired, skinny, tails minus the artistic curl, dejected-looking, and seemingly fit subjects for the ax. But the warmth of spring, proper care, and feeding will do wonders for them. I have had fall pigs that didn't look like five cents in April, yet by June they tipped the scales at 225.

The first thing to do with a backward pig is to free him from worms. When the worms are gone, one of the standard conditioners should be used. Wood ashes, salt, and soft coal should be where the pig can help himself at pleasure. The backward pig must have access to pasture. Green food is one of the best conditioners. In addition, the exercise is good for him.

Ground feed, such as oats or oats and corn, works wonders with runty pigs. I make sure that they have all the tankage they want. Nothing seems to revive a pig's spirits like tankage. The pigs should also have all the corn they want. Unless diseased, the pigs will soon shed their long hair, brighten up, and develop an appetite that is alarming. It is then but a matter of a couple of months till they will be ready for the market at 200 pounds or better.

E. V. LAUGHLIN, Iowa.

The Danger Your Children Run from Getting Overtired

[CONTINUED FROM PAGE 15]

own childhood is the nightmares which I frequently had after an evening of hard study. My brother and I used to walk a mile to school, four times a day, and, later, two and one-half miles each way to high school, or five miles a day. Fortunately, the nervous fatigue resulting from this, added to our daily chores and the school program, became sufficiently evident before we broke down, so that our wise parents planned transportation for us one way.

The forty-eight-hour record has proved very useful in our work with children from foster homes. Recently, in a class composed entirely of older girls from such homes, one of them, at the foot of the class, showed a marked loss in weight. There seemed to be no reason for this loss. The girl had taken sufficient food for gain—2,400 calories—and the foster mother could apparently offer no explanation.

HOWEVER, when the child was questioned by herself as to just what she did each hour of the day, she suddenly broke down, and disclosed a program that might well have been taken from a tale of Dickens. The foster mother had compelled this underweight, malnourished girl of twelve to do the family washing and ironing, together with much other heavy work, and had threatened her with punishment if she should tell about it. The state worker transferred her to a better home, where an immediate gain in weight showed a quick response to kind treatment.

This, of course, is an extreme case. Yet instances are not rare of ambitious children overdoing even without pressure from parents or teachers, and carrying a program that would be a strain upon a full-grown adult.

Naturally, progress in school is a matter of great moment to parents. However, not enough attention has been given as yet to the difference in progress to be expected between a well child and one unable to bring his full energy to his work. Every malnourished child is under par, and while he is in that condition he is unable to do full school work. A program, well planned for the normal child, may be a heavy burden for the malnourished child.

Our school efficiency too often is measured by the number of pupils graduated within a certain period of time. But malnourished children are not capable of sustained mental exertion, and therefore, unless unusually bright, they lag in their studies and have to be crowded. They are often called lazy, when they are physically unable to carry the burden of the school program.

It is not merely the concentrated effort of studying, but the continued tension that produces overfatigue. School tension for three hours at a stretch, or in the case of one-session schools, for five hours with only a brief recess, is a severe strain even upon a healthy boy or girl.

One of the first essentials in bringing about the recovery of the malnourished

boy or girl, therefore, is that he be relieved from too long school hours, complicated as they often are by an atmosphere of fear and tension. The child needs mental employment, but the amount of time that he should be subjected to the strain of school attendance depends upon his condition. Some children can be present the entire school day, provided time is given for rest periods and lunches. Others will gain better on a half-day schedule. Certain children ought not to be under the strain for more than two hours a day, while a few of the more serious cases should be relieved of all school work.

Few schools are organized to make these adjustments, but when it is known that the requirements are only temporary, and that children can be brought in a few weeks or months to a much higher plane of efficiency, often making faster progress than the average well child, it will be less difficult to secure the cooperation of the school authorities.

Outside lessons, such as music, should be omitted during the period of treatment.

After a day spent in work, study and a regular routine, it is natural for the child to wish to have "a little fun" in the evening and so the bedtime is delayed, and there is another cause of overfatigue in the shortened hours of sleep. Nearly forty per cent of all malnourished children keep late hours.

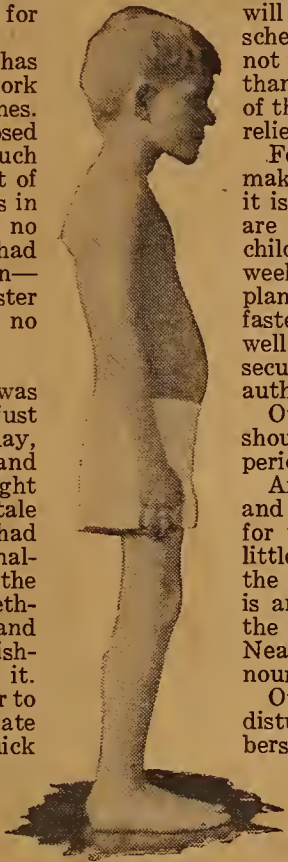
Overfatigue is also caused by disturbed sleep when other members of the family retire late, and again when the child is aroused by early risers. It is caused, too, by sleeping facing the light, for light is a powerful sensory stimulus. It has been demonstrated that the depth of sleep is much greater during the dark nights of winter than during the lighter nights of summer.

There should be no light in the sleeping-room, and children should not be permitted to sleep in under-clothing which has been worn during the day. The amount

of sleep needed varies with the individual child, but the malnourished child needs at least ten to twelve hours' rest in bed. He should be taught to rest even when not sleeping. The ability to sleep for short periods at any time is a habit that makes for health.

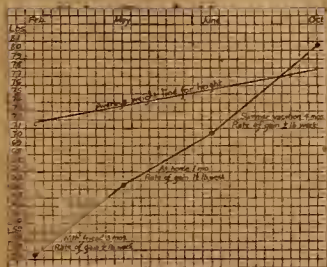
THE rest periods properly taken are of great importance in counteracting the fatigue posture. The clothing should be loosened, and the windows open. The child should lie without a pillow and facing away from the light. Fifteen minutes of complete rest are of greater value than a longer time spent tossing about in discomfort.

In extreme cases, absolute rest in bed for several days may be the means of causing the first gain. In other cases, it will be better for the child to have breakfast in bed at his regular hour, and then continue to rest until ten or eleven. He should not be allowed to sleep through his usual breakfast time, and thus lose the value of regular feedings.



This boy is standing in the typical fatigue posture, which is like that of old age; whereas a good posture is a positive benefit that helps to prevent fatigue; a posture such as the above both indicates and promotes fatigue

Dorothea by her own efforts gained 24 pounds in eight months. She was very far below normal weight, so tired that it took her nearly an hour to get dressed, inactive in every way, and rarely smiling. After she became interested in the plans for bringing her weight up to normal, she exerted all her efforts, with the result shown in her picture at the right and the upward line on chart



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This Trade-mark identifies
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Be sure it is on every pair you buy.



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The yarn used is selected for real strength—and preserved by special Durham process of dyeing which gives a long-lasting good appearance—nothing in the dyeing to weaken the yarn. Additional strong reinforcements at points of greatest strain make Durable-DURHAM just as long wearing as it is possible for hosiery to be. And this quality is found in every pair. Durable-DURHAM is the hosiery of the American family. It comes in all styles and sizes—and in weights for all seasons.

Get Durable-DURHAM for every member of your household and know the saving of having fewer new pairs to buy. For the hardest wear or for dress Durable-DURHAM will give you real stocking-satisfaction. And be sure you get Durham stockings for the children. All styles are identified and guaranteed by the Durham trade mark. Look for it attached to each pair.

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Sales Offices: 88 Leonard Street, New York

**DURABLE
DURHAM HOSIERY**
Made Strongest Where the Wear is Hardest



The desire to keep up with other children in what they are doing often leads to over fatigue. This may be seen in school, or at work, or in play. Many a child is forced by the example of his comrades to long-continued rope jumping, or to bicycling up long hills, when he has not the energy to spare for such exertions. All such fatiguing exercise should, in fact, be avoided while the malnourished child is getting back into condition and climbing up to normal weight.

The child will naturally overdo, and the brighter and more active he is, the greater the danger from this nervous unrest. We have helped many children to get better control of themselves by telling them about a small dog who had to be tied up several hours a day in order to keep him from wearing himself out just by running about. A "free" horse does not have to be urged, but rather held back.

There is an important difference between the fatigue which is a natural result of exertion, from which one makes a quick recovery, and overfatigue, which carries the child each time farther from his normal condition, and makes his return to health and strength more difficult.

This is the kind of fatigue which must be prevented by careful planning. It may sound impossible to arrange for rest periods during the day with the many small tasks to be performed about a farm, and which almost necessarily have to be accomplished by the children. But planned work will accomplish more in shorter hours than a long-drawn-out tiresome day of undirected labor. *Make the children earn their rest, but see that they get it.*

After you have made the forty-eight-hour record of activities, challenge every item and try to make it justify its tax on the child's energy. If any questions arise we shall be glad to have you send in your schedule for comment and suggestions. Tell us how you have tried to meet the difficulty and with what results.

When you have made out the new program, stick to it, and do not allow anything to interfere with the hour for rest periods and lunches until the child is up to normal weight for his height. In our next article we will tell how to arouse the child's own interest in coöperating with you to carry out the health program.

Your Milk Costs Double in Winter

IT COSTS twice as much to produce milk in winter as in summer, and in instances four times as much, according to Prof. F. A. Pearson of the University of Illinois, author of Pearson's formula for determining the cost of producing milk. Professor Pearson has just completed a survey of a number of herds supplying milk to Chicago.

"The study confirms the opinion of many dairy farmers of the great importance of pasture in milk production," he says. "The feed expense, according to our records, in the summer months in which pastures are good is occasionally only one fourth of that in certain winter months, when large amounts of farm-raised and purchased feeds are used."

"The amount of man labor involved is considerably less in the summer months than in the winter period. This is true, we find, whether based upon the amount of labor used on the herd or whether based upon the amount involved in the production of 100 pounds of milk."

"Proper significance of this reduction in labor is appreciated only when it is shown that the savings in labor occur during the pasture season, when most generally maximum labor is needed in the field."

"The cost of producing milk, aside from man labor, feed, and horse labor is more or less even throughout the year. When all expenses are included, the net cost of making milk costs about twice as much in December as in June."

"It would seem that with milk costs so low in summer farmers would concentrate production during these months; but, since the selling price increases with production costs, it is to the best interests of the farmer and consumer to keep production fairly even throughout the year."

Eighteen herds were studied by Professor Pearson. The herds consisted of 407 cows, 19 bulls, and 234 young stock. In the period under consideration, the cows produced 2,733,735 pounds of milk, testing 3.47 per cent of butterfat, or 94,870 pounds. The average per cow was 6,717 pounds of milk and 233 pounds of fat. Fifty-seven per cent of the milk was produced during the six winter months.

T. J. D.



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It is made of the purest and most effective ingredients; that is why—it cleans thoroughly and quickly; lathers freely in coldest or hardest water—does not injure the tenderest skin.

It's the heavy duty soap for the stained and badly soiled hands; always keep a cake of Goblin on hand.

At your grocer's; if he hasn't it on hand send coupon for a free trial size.



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Please send me trial size cake of Goblin Soap.

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F. K. BABSON, Edison Phonograph Dist., 2588 Edison Bldg., Chicago

Middlemen Who Give Real Service

FARMERS of Highland County, Ohio, are not much excited over the idea of eliminating the local stock buyer. The reason is that they are highly pleased with the treatment they are now getting.

Years ago, Earl Rizer, a Hillsboro buyer, inaugurated a plan of buying the farmers' hogs on a fixed margin. It worked so well that after he died his successors, Michael Rizer and William Caldwell, pursued the same method. Their margin is 65 cents a hundred pounds.

When the farmer brings his hogs to the yards, the buyer weighs and grades them, putting each grade into a separate pen. The farmer is given a slip with his weights and grades.

If Brown's hogs grade as heavy porkers, and that grade brings \$16.65 in Cincinnati, he gets \$16. The buyers pay freight, commissions and all expenses out of their 65 cents. As soon as the farmer sees the market report for the day his hogs reached the market, he can figure for himself what is coming to him, and knows that he will shortly get a check for that amount. In case he is in urgent need of money, they will advance him most of it when he delivers the stock. When hogs are being fed green corn the buyers charge 75 cents margin. A similar method is used for other livestock.

The long lines of wagons at the Hillsboro stockyards every Monday and Thursday are sufficient evidence that the Rizer plan is satisfactory. It is said that the firm buys 95 per cent of the hogs from three fourths of Highland County.

WHEELER McMILLEN, Ohio.

Hog Oiler Paid Us

WE HAVE found that the easiest way to control lice on hogs is to apply crude oil to their backs. This liquid, being rather heavy, will work its way down over the sides of the animal and slowly cover practically all portions of the body where the lice congregate. A tiny drop of crude oil touching a hog louse will kill it immediately. In addition, the oil will kill all the nits or eggs on the animal's body. Few other lice remedies will do this. Powders generally kill lice after they have committed their greatest nuisance—that of laying hundreds of eggs.

A hog oiler is a boon to any swine raiser, and is cheap in operation. We secure our oil from a local oil tank, but even on the market crude oil can be bought for not more than \$4 or \$5 per barrel. However, in winter time, or when the hogs are penned up so that they cannot get to the oiler, a small quantity of oil supplied direct to the animal's back will have the desired effect. Some farmers hang a heavily oiled sack in the runway between pens so that it brushes their backs. This is quite effective.

It will pay the farmer who raises a considerable number of hogs to buy a barrel of oil and keep it on hand. With such equipment he will have little trouble with lice. It is known that lice increase the cost of pork production from \$1 to \$2 per hundred pounds. The investment of a few dollars in a hog oiler and a barrel of crude oil will be very worth while. C. M. BAKER.

The Men Who Make Our Botanies

IT HAS been said that perhaps the most monumental life tasks of the last hundred and twenty-five years have been in the domain of botany, wherein certain scientists have undertaken to make a flora each of his own country. In these works we shall have not merely a list of all the plants of a country, but also a full account and description of every plant.

Some notion of such a task may be illustrated by one or two special cases. The Italian flora that Prof. Filippo Parlatore began in 1848 was completed in 1894. But it was not completed by Parlatore himself; he had long since gone to his reward.

In this country, Prof. Asa Gray, began the "Flora of North America" at about his twenty-fifth year. The first number appeared in 1838. Gray died in 1888, and the work was then only about half finished. During the fifty years that Gray toiled in this work his task was never interrupted for more than a brief period.

Practically only two great flora, those of Australia and the Orient, were successfully completed by their original authors. New York Sun.

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You are missing good things and a chance to save when you don't use raisins freely.

You miss a fine nutrition also, for raisins furnish 1560 units of energizing nutriment per pound. More energy than an equal weight of eggs, milk, meat or fish.

So while raisins make foods taste better they also make them better foods.

Try This "Oatmeal Betty"

2 cups cooked oatmeal $\frac{1}{2}$ cup SUN-MAID Raisins
4 apples cut up small $\frac{1}{2}$ cup sugar
 $\frac{1}{4}$ tsp. cinnamon

Mix and put in mold. Bake one-half hour. Serve hot or cold with raisin sauce. This will serve five people. And it will tell you something of the possibilities of raisins.

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We Put Grandfather's Run- Down Farm on Its Feet

[CONTINUED FROM PAGE 10]

stirred. In this way many a potato and corn crop has been tided over a drought.

There is, on this farm, good soil and poor soil, high ground and low ground, light soil and heavy soil. It was found to be a poor investment to bury four barrels of seed potatoes, worth \$5 a barrel, and 1,500 pounds of fertilizer, at \$50 a ton, in an acre of poor sandy loam where a droughty July would scorch the crop, or in low land where a wet August meant a loss from rot.

So rotations were modified to fit the soil's ability to produce good crops. The best results have been obtained by cropping the medium loamy fields to potatoes (one to three years), hay, and corn, followed by potatoes. On the light sandy portions, the rotation is rye (two years), hay, and corn.

The latter rotation was followed on the soil too low for potatoes, with usually a small area of mangel beets. The four acres of meadow land is in permanent pasture. Every four or five years it is plowed and reseeded, and a good dose of lime and fertilizer applied. About four acres, most of which is too light for potatoes, is in a young apple orchard.

IT DIDN'T take us long to discover that green-manure crops were essential. If possible, no field is allowed to lie bare over winter, and green-manure crops are worked in through the summer months at every opportunity.

For instance, when corn is cut in late September on fields which are to be planted to potatoes the next year, it is usually too late for a legume crop, so rye is sown. This makes a good growth before cold weather sets in, and serves the double purpose of preventing the lighter soils from washing or blowing away, and of furnishing a good supply of humus to be plowed under in the spring.

If potatoes are to follow potatoes, there is usually ample time for a legume to make a good growth after the crop is dug. For this purpose a mixture of rye, oats, and crimson clover is sown. Fine results have been obtained with this combination—the crimson clover lives through the winter and collects the all-important nitrogen, the oats make a quick growth and provide excellent pasture at a time when pasturage is usually short, and the rye furnishes a substantial cover over winter.

Cowpeas so far have proved the most profitable leguminous green-manure crop, being especially valuable for the lighter soils. Immediately after the first rye crop is harvested, the stubble is plowed under, and cowpeas drilled in. They grow rapidly, and when it is time to sow the second crop of rye, in middle September, there is a rank, knee-high growth, the roots furnishing a great store of nitrogen-rich humus.

It was found best not to plow under the peas at this time, as it loosened up the soil too much. So, unless it is desired to harvest the peas for hay, they are disked down, and the rye sown with a disk drill. On the poorer sandy fields, rye was grown continuously for several years, with a crop of cowpeas between each season's crop and the following one. It was interesting to note the marked increase in yield each year. Some sandy knolls which formerly had been too poor to produce rye which was hardly worth harvesting, in three or four years were growing rank, heavy crops.

AND now a word about lime. In the effort to increase yields we were least successful with the hay crop. After harvesting a bumper crop of potatoes the following hay crop might be almost a failure. The trouble was diagnosed as soil sourness, and a campaign of liming was begun.

The lime was usually applied before seeding the grass mixture, not only because this crop is lime-loving, but also because this placed the lime in the rotation as far as possible away from the potatoes. On the lighter soils the lime was sometimes applied when the rye crop was sown. Check strips across the fields demonstrated clearly that marked increases were produced by the lime.

After liming for a number of years, my brother began to experience trouble with potato scab.

"There is such a thing as too much lime for potatoes," said he. "It looks as if I shall either have to lose some of my potatoes from scab, or else sacrifice a big hay crop for the potatoes. Since potatoes are my money crop, I'll continue to lime liber-

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ally the fields where I don't grow potatoes. but I'm going to ease up on liming of the potato ground."

Last year my brother coöperated with the state agricultural experiment station in conducting tests on the use of sulphur as a means of controlling potato scab.

The results were very encouraging. If it is found that the proper balance of acidity for potatoes and other crops can be maintained by alternating the use of sulphur and lime, one of the potato growers' most serious problems will be solved.

Every farm a miniature agricultural experiment station, in the opinion of my brother, is the way to get ahead. No small part of his success has been due to constant study of the problems within his own farm borders. He has become as familiar with the idiosyncracies of his fields as the chauffeur with the peculiarities of his car.

NUMEROUS tests by the state agricultural experiment station and the county board of agriculture, of which he is president, have been conducted on the farm, but experimental work had not ended there. Every crop is an experiment. Different brands of fertilizer, applied in varying amounts, and different lots of seed, on the different types of soil, are continuously tried out, and the results carefully noted.

Visit him at almost any time during the growing season, and he will show you portions of the fields carefully marked off where the treatment is carried, and usually corresponding differences in the growing crop can be easily noticed. This has meant not only bigger crops, but greater economy in their production as well.

I believe this is what we may expect in the next decade on many of the run-down farms in the East. It is typical of what is now being done in many places in New Jersey.

With nearby markets and a rapidly growing urban population, with excellent transportation facilities—numerous railroads, the growing use of the auto truck, and good country roads—with a better understanding of the principles of soil fertility, diffused through the agricultural colleges, county agents, and other agencies; with the stimulation furnished by the increased cost of production, making better yields necessary—under these conditions we may reasonably expect to see large numbers of farms in the East once more come into their own.

"Cheating Cheaters"

I BELIEVE where no special precautions are taken rats and mice will often do more damage to our crops than anything else. We feel blue when water overflows a piece of land newly sowed, or when a crop just ready to harvest is damaged, yet we will store away our grain, giving little attention to where it is put.

I have done these things myself. I never gave a thought to the hole in the granary door and the hole in one of the bins along the haymow. I had pushed some rubbish in those holes until I could find time to patch up the places right.

Harvest time came and the crops were stored away. A little later on I noticed a sink hole in the wheat bin, and upon examination I found to my astonishment that perhaps five or six bushels of wheat had disappeared. Where could it have gone? Had someone broken into the granary? No. The lock was all right and the other bins were full, so it could not be that. After a few days of thinking I happened to recall the rat hole that had been filled in with burlap. My belief was verified when I discovered a small amount of grain that had fallen through the granary.

Oh, such a job! Eighty-six bushels of wheat to rehandle. In due time the holes were securely sealed with heavy galvanized sheeting. Being determined to see what the rats did with the wheat, I took almost a day to dig the hay away from along the granary. We found grain strewn everywhere—almost seven bushels in all, when it was scraped up and put through the fanning mill. The rats had not eaten a great deal in so short a time, but nevertheless it goes to prove how destructive they really are when given a chance to have everything their own way.

It has been estimated that there are more than 100,500,000 mice or rats in this country. Their damage yearly is more than \$200,000,000. This loss alone is largely borne by the farmer. One way to cut it down is to wage war on rats and mice in every possible way we can. Begin by making your storage bins rat-proof.

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Mrs. Andrea found that 4 lbs. of Mazola, cooked down to 2 lbs., fried 24½ lbs. of potatoes. While 4 lbs. of lard cooked down to 2 lbs. fried only 7 lbs. 14 oz. of potatoes.

Tested on fish steaks, one inch in thickness, Mazola fried 25¾ lbs., while lard fried only 16½ lbs. of fish.

Of doughnuts cut uniformly 2¾ inches in diameter, Mazola fried 208, while lard fried only 138.

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You owe yourself a trial of this new teeth-cleaning method. Dentists everywhere advise it. The results it brings are all-important, and they do not come without it.

What film does

Your teeth are coated with a viscous film. Feel it with your tongue. It clings to teeth, enters crevices and stays. And dentists now trace most tooth troubles to it.

The ordinary tooth paste does not end film. So, despite all brushing, much film remains, to cause stain, tartar, germ troubles and decay.

It is the film-coat that discolors,

not the teeth. Film is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

Ways to combat it

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These five methods are combined in a dentifrice called Pepsodent—a tooth paste which complies with all the new requirements. And a ten-day tube is now sent free to everyone who asks.

Watch the teeth whiten

You will see and feel results from Pepsodent which brushing never brought you heretofore. A week's use, we think, will amaze you.

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Two factors directly attack the film. One of them keeps the teeth so

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Watch these effects. Send the coupon for a Ten-Day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. Note how teeth whiten as the film-coat disappears.

The book we send explains all these results. Judge what they mean to you and yours. Cut out the coupon so you won't forget.

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My Special Crops Bring Me Ready Cash

IT IS not enough to know that we are producing average crops. The time has come when it is up to us to produce something better than the average in order to pay the cost production and leave a margin of profit. Crops must be rotated, soils must be handled according to their needs, and crops so planned that they will fit the season and the available labor supply. In this way we can lay the foundation for diversified farming. Then it is not difficult to discover some special money crop.

To farm successfully we must have either available capital or credit. We all have found out that it is often better to have the cash. There may come a time when money is "tight," owing to changes in the business world, and then the need of available cash will be apparent. It, therefore, behooves us to diversify our farming operations that we will have crops coming on at different times, so that if one, or even two, should fail we may have others to carry us over until our special money crop comes on. Now, I don't mean to infer that you can't make money farming unless you have a great "wad" when you commence. A "wad" alone isn't enough.

The chances are that if you have all the money you need when you are first starting, without the knowledge gained only by hard knocks, you will not handle it properly. These things I know, having gone through the mill myself.

Most farmers are not skilled in any one thing, and unless a man is skilled at something he is not going to develop it very highly! We have many highly developed farms, of course, but there is room for improvement right on your farm and mine. The money crop specialty is the place to do this. You can handle your diversified farming operations just as well as if you were not specializing in anything. At the same time your specialty will often develop faster than you realize and its profit make you feel like going on.

The list of money-crop specialties is so long, and farmers' tastes are so different, that it would be folly for me to advise any certain one. I have my choice, but my choice would not, perhaps, suit you, and I might not do so well with your choice.

Sorghum a Good Side Line

I always try to raise everything the soil will produce, and at least enough of everything to supply the family of eight, of which I am very proud—the wife, three sons and three daughters. I also try to have several things to sell. Sales of these specialties always vary more or less. Last year it was less, owing to very dry weather and other adverse conditions.

My main specialty is sorghum-cane sirup. I make more clear money out of my sorghum molasses and its by-products than from any other one thing produced on the farm, all years considered. I have never yet had a failure of sorghum cane. Sorghum will readily drink up a great quantity of water and grow surprisingly on fertile soil. It laughs when the sun shines hot and the hot winds blow, and if it is well cultivated the growth doesn't stop. I get all the way from 100 to 250 gallons per acre, 100 gallons being considered a good yield. I am oftener near the 200 mark than the 100.

I sell the sirup out at our mining towns 15 and 25 miles away. It has been selling very high for the past three years. I usually get from 20 to 40 bushels of seed per acre. The best grade is sold for seed and the remainder fed out on the farm. I have never made an exact test to see just what the seed is worth for feed, but I feel sure it is bringing in a good price fed to the poultry. For the best seed grade I get \$2 per bushel for any amount I can raise.

I own and operate a mill, and always grind the cane with the fodder on, making considerable feed for the neighbors for miles around. I am never short of good forage, for I have learned that after sorghum is ground, fodder and all, it is most excellent feed, both dry and siloed. A large bunch of hogs that consume the by-products from the filters and pans, in connection with good forage and corn, laugh and grow fat. I do not intend to figure out just what I get clear, and even if I did, Mr. Doubting Thomas might say it was not true. That crop is only one of my specialties. Different kinds of berries and onions have proved to be very profitable.

While harvesting my alfalfa I try to keep my head level and not neglect the other fields. That ten-acre alfalfa patch is a source of much satisfaction to me, and I

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ANITA STEWART

"Mulsified Coconut Oil adds Life and Lustre to the hair and is very refreshing as a shampoo"—Soap should be used very carefully, if you want to keep your hair looking its best. Most soaps and prepared shampoos contain too much alkali. This dries the scalp, makes the hair brittle, and ruins it.

The best thing for steady use is Mulsified coconut oil shampoo (which is pure and greaseless), and is better than anything else you can use.

One or two teaspoonfuls of Mulsified will cleanse the hair and scalp thoroughly. Simply moisten the hair with water and rub it in. It makes an abundance of rich, creamy lather, which rinses out easily, removing every particle of dust, dirt, dandruff and excessive oil. The hair dries quickly and evenly, and it leaves the scalp soft, and the hair fine and silky, bright, lustrous, fluffy and easy to manage.

You can get Mulsified coconut oil shampoo at any pharmacy, it's very cheap, and a few ounces will supply every member of the family for months.

Be sure your druggist gives you Mulsified.

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Do you look forward serenely, confidently, towards the day when you will wed the girl you cherish? Do you see in your day dreams a loving, admiring wife and sturdy children of your own flesh and blood, and a dear little, happy home?

This is the picture every young man ought to be able some day to realize. But you may be one of the thousands, who, for one reason or another—known only to yourself perhaps—have stumbled into youthful errors which have discouraged and weakened you and made you almost hopeless of ever being happily married.

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ached every night*

NO wonder, either. On them all day long doing things for other people. Dad brought her some

Mentholatum
A HEALING CREAM
Always made under this signature *R. B. Rushing*

Mother tried it—and what a relief! The ache and throb were gone and her feet felt like nineteen instead of ninety.

Now she sings all the time

Use Mentholatum for sunburn, too—it cools the pain and heals the burn. Keep it handy for cuts, bruises, and other "little ills."

Mentholatum is sold everywhere in tubes, 25c; jars, 25c, 50c, \$1.

The Mentholatum Co.
Buffalo, N. Y.

IF YOU WANT TO SELL OR EXCHANGE your farm, city property, land or patent, no matter where located, write me.
JOHN J. BLACK, 71st St., Chippewa Falls, Wisconsin

Lift off Corns with Fingers

Doesn't hurt a bit and "Freezone" costs only a few cents



You can lift off any hard corn, soft corn, or corn between the toes, and the hard skin calluses from bottom of feet.

Apply a few drops of "Freezone" upon the corn or callus. Instantly it stops hurting, then shortly you lift that bothersome corn or callus right off, root and all, without one bit of pain or soreness. Truly! No humbug!

Tiny bottle of "Freezone" costs few cents at any drug store

look it over frequently. But it is raised more for home use than for market. I always try to use on the farm everything in the line of feeds, and often buy some, thus keeping up the fertility of the farm. By raising hay and grain for market, the fertility is removed very rapidly. Such a course cannot always be followed and the fertility be kept up unless large amounts of manure and fertilizer are purchased. We cannot all buy manure. The supply is miserably short of the need, though perhaps not short of the demand.

Be sure not to do one thing. That is, to buy nitrogen. The Creator made ample provisions for us to get it free from the air by way of the legumes. However, most of us must buy phosphorus, and some of us may have to buy potash under certain conditions. I have never bought either, and our station at Urbana says we have potash enough in our worn hills to last for ages.

My crops have proved that all we need to do is to make our potash available, and this is one of the good things about diversification. Set the fertility free by proper soil handling and then bring along the money-crop specials. I could write the paper full on this one subject, but must not impose on the good-natured editor, so I will quit, with the story cut off just back of the ears.
R. B. RUSHING, Illinois.

Neighborhood Cooperation

FARMERS are often said to be the most independent folks on earth. In reality we are that all right, but with the first syllable detached from that word. We're dependent.

Not so far from here there is a lawsuit hanging fire that has cost one wealthy landowner about \$10,000, and the suit is not yet settled. Many others concerned with the same suit are poorer by hundreds of dollars. Lawyers richer—yes. The ditch could have been dug many times over for the amount of cash already spent. And there are dozens of similar cases all over the country.

One man or a set of men may want a ditch cleaned or straightened up. Others do not see that it will benefit them any, and so they fight it. They admit that it will benefit the community, but it would cost them more than they would be benefited. Result—a fight. Later they may want something of the same sort done. Because the first crowd made them pay for what they didn't want, they expect to even things up. Result—another fight.

To-night a neighbor was here with a petition on a township school matter. So far as being a patron of the school is concerned, I am not interested. Yet I signed the petition. I know it will cost some money. Some of my neighbors are doing the same thing to-night. The time will come when we may want a petition signed that will not interest the other fellows. And we will expect them to sign it. It's a poor sport who won't use the golden rule after the other fellow used it first.

In our neighborhood there is an open ditch that has to be cleaned every few years. So far we have arranged between us jointly to hire a surveyor to lay the job out and figure out the portion that each one of us is to clean out. And so far it has always been done. Either we do the actual work ourselves or we hire a ditcher to do it for us. There are some men who are benefited more than others, and some who could get along very well with no ditching done. Yet these fail in line, and we have a satisfactory deal every time.

No matter whether we want to or not, we've got to consider the other fellows' improvements. In any work of this kind the tax that pays it is collected from farms in the county and township that are not benefited. Yet the same farms want improved roads or ditches, and your farm helps to pay. It is only helping each other and distributing the cost over more years. I know of several farmers who refused to sign a stone road petition because they didn't have any use for a road at that point, or not much use. Yet later, when there was a road they did have use for, and they circulated a petition, they expected everyone to sign for accommodation.

This is what I like to hear a man say, and this one has signed three or four road improvement petitions that will cost him extra taxes but give him very little benefit: "Yes, I'll sign that petition. You fellows need a road. Some time I may want a road myself."

Even though it is morally right, it does not pay financially not to come and go with the needs of your neighbors. One can't get along without neighbors very well, though some folks try to. Wait till you get sick and see how it works. EARL ROGERS, Ohio.



A Few Books Started Lincoln

What are the few great books that will give the essentials of a liberal education?

HE talked like a man who had traveled. He knew History, and something of Science. He wrote in a style of wonderful beauty and simplicity—such a style as only comes to a man from reading the works of master writers.

Yet did you ever think of this?

You, yourself, have probably read as many books as Lincoln read in the first thirty years of his life.

What is the difference between his reading and yours? Why is it that you have gained only a smattering of knowledge from your books while he gained a liberal education from his?

The answer is that he knew what few books were really worth while; he made every moment count.

Why not decide right now—to-day—that you will stop wasting your reading? Why not say to yourself: "In my own small way I am going to do what Lincoln did. I will read in such a way that six months from now I will be a bigger, more effective, more interesting man or woman than I am today."

You can do it: a hundred thousand Americans have proved that you can do it, through

DR. ELIOT'S FIVE-FOOT SHELF OF BOOKS

A pleasant and easy way to learn to think clearly and talk interestingly

Out of all the millions of books of Travel, Science, Biography, Essays, Drama and Poetry, Dr. Charles W. Eliot, for forty years President of Harvard, has selected four hundred and eighteen and arranged them in fifty volumes.

These books, he says, even if a man or woman will read them only fifteen minutes a day, will give them the essentials of a liberal education.

Adventure, Entertainment, Thrill

A liberal education—think of it! The power to think clearly and talk interestingly, to be a marked man or woman in any company. And all in exchange for a few minutes of pleasant reading each day. Text books are often tiresome. But these are not text books.

They are the best written, most fascinating books in the world.

Here you voyage with the world's great travelers; you see the world's famous dramas; you are with the world's foremost scientists in the laboratories, and the great adventurers in their most thrilling moments. And every day's reading—every fifteen minutes—makes you a bigger, broader, more interesting man or woman.

Send Now for This Free Book

Before you spend another penny for books, get a copy of "Fifteen Minutes a Day"—the free guide book to reading pictured on this page.

It's a book that tells you how to turn wasted moments into growth and increased power. It's ready and waiting for you: It's entirely free.

A valuable little book—Free



All your questions about the Five-Foot Shelf are answered in "Fifteen Minutes a Day." It's a great little book in itself. It contains:

1. Dr. Eliot's own story of the Five-Foot Shelf.
2. Many illustrations from the Five-Foot Shelf, including a full-page picture of Marie Antoinette riding to her death.

It tells what the books are that Dr. Eliot has selected, and how the reading courses and the marvelous encyclopedic index are arranged. Send for this guide book to good reading. Send for it now; and begin at once as Lincoln did to make your reading count.

P. F. COLLIER & SON COMPANY
416 West 13th Street, New York

Send to me by mail absolutely without obligation the free book describing Dr. Eliot's Five-Foot Shelf of Books, and containing Dr. Eliot's own plan of how and what to read for a liberal education.

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"VELLASTIC" is made for men, women and children—in union suits and separate garments, and can be had in any good store at prices you'll like.

Send for "Bodygard" Booklet.

UTICA KNITTING COMPANY
Utica, N. Y.

New York Office, 350 Broadway



*"For Every
Member of
the Family"*

Better Farm Babies

I REALLY cannot tell you how greatly I have been benefited by your correspondence during these months of waiting. Every letter has cheered me just a little more, and I consider the advice given from time to time invaluable.

I must confess I felt very helpless when I thought of how I would manage to care for my baby after it is here, but now I feel real confident that I shall know what to do, and I owe it all to your wonderful help. Both my husband and myself think you are doing a wonderful work, and are very thankful for the privilege of benefiting by it.

A very dear friend of mine in Easton has just sent me word that she is also expecting a baby, and I immediately advised her to join the Expectant Mothers' Circle, for she admitted she felt somewhat afraid and I know that after receiving your letters she will lose all that fear and be perfectly happy.

In a few days, or a week at most, Baby should be here, and I am so anxious for its arrival, and certainly hope we do have a real Better Baby. And I want to join the Mothers' Club as soon as possible, for I know I shall need your help in bringing up Baby.

I expect to go to one of the suburban hospitals here, as I really consider the hospital the best place to go, and the babies are very well trained by the time one is ready to come home.

We have a lot of confidence in the doctor attending me, and as I have been in real good condition right along I feel that everything will turn out all right.

I thank you very much for assistance and advice, and extend my best wishes for your continued success.

Mrs. H. E. N., Pennsylvania.

I WANT to say what a fine thing the Better Babies Bureau is. I had the letters to the expectant mother, and also those for the Mothers' Club. I have followed your suggestions all the way through. So many of my friends who have babies have said, "Well, how do you know what to give her?" or "How did you know how and when to wean her?" or "How do you get along the way you do?" I always tell them to write to the Better Babies Bureau.

My last letter must have gone

"Not traveling very far right now, but I'll be up and crawling soon"

astray, for I failed to receive it. A friend of mine has one which I read. I would like to have it to file with my others.

Thank you so much for your kind help. A Better Baby is surely a "thing of beauty and a joy forever."

Mrs. F. G., Illinois.

YOU just ought to see our Better Baby! And how good it makes me feel to know

that everything is over with, and that we have a nice strong, fat baby girl! She is in perfect health, and is growing so nicely. Of course, she is tiny, but we think that makes her all the dearer, for she is just as plump as can be.

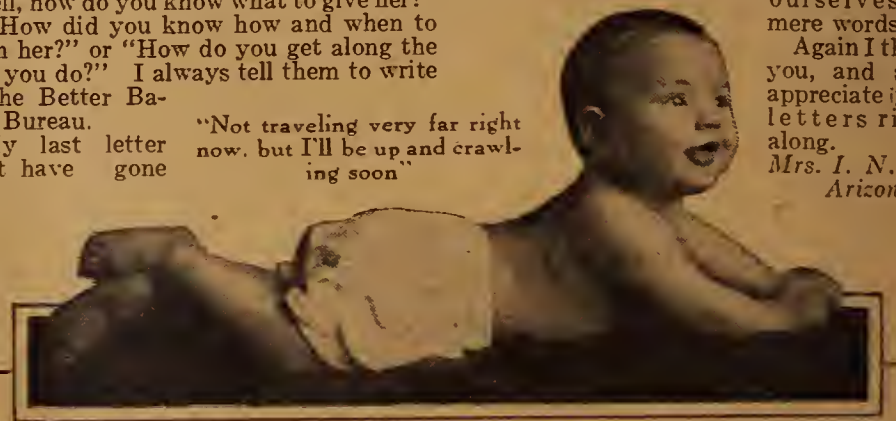
I received your letters all the time, and want to thank you for the many suggestions. I do not know how I could have done without them. I realize that this is a very small way in which to express my appreciation; but, indeed, you will always have a big place in my heart.

It always seemed while I was receiving the first series of letters, that each one came just in time to answer some question or to clear up some perplexity which I was beginning to be concerned about. I know I'll have even more need for your help now, so I am enclosing stamps for the letters and the card for registration of Baby in the Better Babies Bureau.

Mrs. H. W. L., Ohio.

JUST a note of appreciation for your help in the past, and 50 cents for the continuation of your letters. They were a great help, and I assure you we have not only a Better Baby, but also one of the "Best." She is a little darling, has a regular routine, and so far hasn't had a mite of anything but the very best of health. Even in the summer heat of our Salt River Valley (one of the warmest places in the United States), she hasn't any prickly heat. In fact, while she is our first one, she is so much better than her father and I dreamed a baby could be, that we are just too happy to express ourselves in mere words.

Again I thank you, and shall appreciate your letters right along.
Mrs. I. N. W., Arizona.



What the Better Babies Bureau Is

And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with *Fifty Cents* in stamps, for postage, and state what month you expect your baby.

THE MOTHERS' CLUB: Every mother of young children is eligible. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends *Fifty Cents* in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for *Ten Cents*. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

BETTER BABIES BUREAU

or to Mrs. Caroline French Benton, Counselor

FARM AND FIRESIDE

381 Fourth Avenue, New York City

STATEMENT of the ownership, management, circulation, etc., required by the act of Congress of August 24, 1912, of Farm and Fireside, published monthly at Springfield, Ohio, for October 1st, 1920. State of New York, County of New York.—ss.: Before me, a notary public in and for the state and county aforesaid, personally appeared Lee W. Maxwell, who, having been duly sworn according to law, deposes and says that he is the General Business Manager of the Farm and Fireside and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, embodied in section 143, Postal Laws and Regulations, printed on the reverse of this form, to wit: 1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, The Crowell Publishing Company, Springfield, Ohio; Editor, George F. Martin, 381 Fourth Avenue, New York, N. Y.; Managing Editor, Trel W. Yocum, 381 Fourth Avenue, New York, N. Y.; Business Manager, Lee W. Maxwell, 381 Fourth Avenue, New York, N. Y. 2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.) American Lithographic Co., New York, N. Y.; Denny Pomroy & Co., New York, N. Y.; Louis Ettlinger, New York, N. Y.; Ella Gardner Hazen, New York, N. Y.; George H. Hazen, New York, N. Y.; Joseph P. Knapp, New York, N. Y.; Florence Lamont, New York, N. Y.; Arthur H. Lockett, New York, N. Y.; Antonette K. Milliken, New York, N. Y.; John S. Phillips, New York, N. Y.; Pomroy Bros., New York, N. Y.; Ida M. Farbell, New York, N. Y.; J. Walter Thompson, New York, N. Y.; Irwin Untermyer, New York, N. Y.; Alvin Untermyer, New York, N. Y.; Alvin and Irwin Untermyer, Trustees for Irene Myers Richter, New York, N. Y.; William Watt, New York, N. Y. 3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None. 4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing the full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him. 5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is— (This information is required from daily publications only.) Lee W. Maxwell, General Business Manager. Sworn to and subscribed before me this 30th day of September, 1920. (Seal) Mary B. Lambkin. (My commission expires March 30, 1921.)

NOTE.—This statement must be made in duplicate and both copies delivered by the publisher to the postmaster, who shall send one copy to the Third Assistant Postmaster General (Division of Classification), Washington, D. C., and retain the other in the files of the post office. The publisher must publish a copy of this statement in the second issue printed next after its filing.

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How I Made Life More Livable on Our Farm

THERE was a time when our daily round of duties meant the carrying of from 25 to 30 gallons of water. In winter-time it meant carrying coal for three of four fires, some of them up-stairs; cleaning and filling a number of lamps and lanterns; skimming and washing of many crocks of milk, and churning by hand.

It meant cleaning the linoleum on the kitchen floor by getting down on the knees, turning the washing machine by hand, sweeping and raising germ-laden dust with a broom.

In spring and summer it meant caring for many sitting hens, and then mothering little chicks in old boxes that let them get wet when it rained.

Work was slow on bake day because of a cold kitchen.

After years of work and planning, the old kitchen was replaced with a new one. One at a time, as could be afforded, improvements have been added to lighten the daily duties above mentioned. Now the daily routine of work is quite different.

A pressure water system solves the water question. It supplies filtered rain water, hot and cold, at the kitchen sink and at a wash bowl in the kitchen for toilet purposes, also for the bath room.

A hot-water system heats the house all through, and eliminates the carrying of coal. A radiator in the kitchen, with a shelf on it, makes a warm place for the bread to rise. The yeast is kept warm overnight in a home-made fireless cooker.

A cream separator skims the milk and the churn is run by power.

The chicks are hatched in an incubator in the cellar, and raised under coal brooders, with success, in a house that keeps them dry.

An electric-light plant ends the daily cleaning of lamps and lanterns, and makes power beside.

THERE are electric lights throughout the house from cellar to attic, in the barn, and in all outbuildings where needed.

An electric washing machine and wringer does the work of the old hand power. Water and drains are also in the washroom.

A receptacle in the kitchen provides a connection for the electric iron.

An electric cleaner attached to any light socket in the house cleans without dust. Attachments come with it for blowing dust from radiators and bed springs, cleaning draperies and upholstered furniture. A mop and bucket with wringer quickly cleans the kitchen linoleum.

A wheel tray saves many steps, carrying a whole meal or bringing all the soiled dishes from the meal to the kitchen with one trip. The soiled dishes are all scraped and arranged on the tray ready to wash as they are removed from the table.

Our steam-pressure canner is one of our much-liked conveniences. It does the work in about one third to one half the time of any other method, saving fuel and much time in a hot kitchen keeping up a fire.

The oil stove for summer often can be used to cook the evening meal, and is often used at the same time as the range when there is a lot of cooking to be done.

These improvements and conveniences tend to make farm life more livable and enjoyable. They make farm life more interesting and attractive for the young folks and after they settle somewhere for themselves, Father and Mother need these helps more than ever.

MARY KINTIGH, Pennsylvania.

This Habit Saves My Time

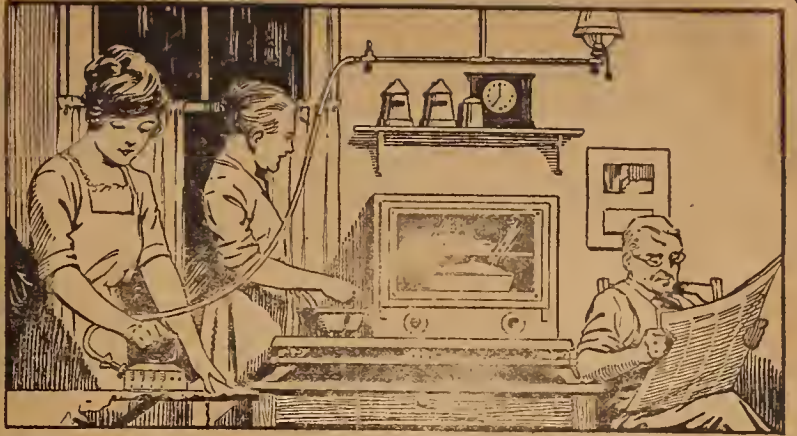
THE one thing, perhaps, that has meant the most as a labor saver in my housework is the "newspaper habit"—simply the use of papers on the kitchen work table when doing the thousand and one more or less dirty, littering household "stunts," thereby reducing the after clean-up to the simple removal of paper, shaking or burning, as necessary.

If there is cake to be baked, the newspaper is invariably spread first. Preparing vegetables, canning fruit, starching clothes, and cleaning white shoes, are a few more of the commonest tasks preceded by the usual paper.

Once the habit is formed, countless things will suggest themselves to be done on the paper-covered table.

LAV. MCC., New York.

Your farm business is big enough to keep your son on the farm.



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EVEN though you live on a farm, miles from town, the much talked about "city conveniences" are at your command.

You can have better light in your home and barns than you could if you lived in the city. Mellow, bright light in any room in the house or in any farm building at a twist of the fingers—no matches needed.

Your wife can have an up-to-date gas stove in her kitchen and a labor-saving, self-heating flat iron.

Think of having such conveniences in your home ready at any time for instant use!

And Carbide Gas is the only artificial farm fuel that will both light the home and heat the stove.

It costs less to use Union Carbide than it does to burn oil, less, even, than city gas would cost you. Carbide gas light is four times as powerful as ordinary illuminating gas.

And Union Carbide is so easy to use. It is simple to install and requires no expert attention—in fact it needs scarcely any looking after at all.

Write us for an interesting booklet.

Why Carbide Gas has been used for light- ing and cooking for twenty years

1. Carbide gas is made automatically; requires only carbide and water.
2. Nearest light to sunlight.
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4. A year's supply of Union Carbide hauled in one trip from town.
5. Any house, new or old, easily equipped for gas lighting and cooking.
6. Burns clean without soot or odor.
7. Cooking flame the hottest known.
8. Increases property value more than its cost.
9. Carbide gas the only artificial farm fuel for both lighting and cooking.
10. Plant easily installed.
11. Requires very little room.
12. Needs attention but a few times a year.
13. Costs nothing to operate when not in use.
14. Seldom needs repairs.
15. Every room has its own bright light.
16. No carrying of lights from room to room.
17. Gives sun-like light in barn and other buildings for early morning and late evening chores.
18. Saves all the daily labor of refilling and cleaning lamps.
19. Saves carrying wood into kitchen and ashes out.
20. Keeps the kitchen cool in summer.

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Diamond Dyes

FAST FADELESS

A Thanksgiving Party

By Emily Rose Burt

EVERYBODY'S invitation came wrapped up in a reddish-greenish-brownish crêpe-paper cornhusk, and this is what it said:

Polly Popcorn bids thee to a Pilgrim Party at three o'clock on ye afternoon of Thanksgiving at Dorothy Smith's house Watch out for ye Indians

Polly Popcorn, who looked suspiciously like Dorothy Smith to her little guests, was wearing a fluffy white frock that appeared to be all popcorn. Really, her mother had made it out of some big-checked yellow-and-white gingham, by running a gathering stitch around edges of the white squares and drawing them up into little fat white bunches. Her cap was just the shape of a frilly round popped popcorn kernel.

The first amusement was Popcorn Art. All the girls and boys sat around the dining-room table. In front of each one was a saucer of snowy popped corn, a sheet of yellow paper, a pencil, and a wee tube of library paste.

You know what queer shapes corn pops into—a face, or a head, a cat, a monkey, a spider, an Eskimo's hut. The idea of this contest was to select a promising popcorn kernel—one that suggested a picture—then stick it by means of the library paste to the yellow paper, and with the pencil draw whatever else was needed to complete the picture.

Legs, tails, whiskers, bodies, back yards, all sorts of things you can imagine, were added, and the results were very funny. Each child was permitted to make three, provided they would all go on the sheet of yellow paper.

Then each child signed his or her name, and the pictures were carefully collected and laid out on the table for an art exhibit, later, of course, to be taken home by the individual artists.

NEXT, sides were chosen for a game called Indians and Settlers. Indians were given headbands with gay feathers to wear. Settlers had wide-brimmed brown paper Pilgrim hats. A space was cleared down the length of the living-room, and the Indians and Settlers formed in two parallel files. At the opposite end of the room a papoose doll leaned against a wigwam, and a little white baby doll lay in a doll's cradle.

The game was really a rival relay race. At a signal the first Indian and the first Settler started for their respective goals; the Indian snatched the white doll, the Settler the papoose; then they turned hastily, and ran back to their separate teams, handing their prizes to the next in line, who, in turn, ran to deposit the prizes in wigwam and cradle, as first found. These runners, on returning, touched hands with the next in line, who then had to run and snatch the prizes in their turn, and so back to the team.

Thus the runners alternately stole and returned the papoose and the white baby. The first team to complete the circuit was hailed as the winning one, and marched triumphantly about the room to the music of the phonograph.

The phonograph came into use again for the next game. Ten children were selected to belong to the popcorn chorus. Each was given an unshelled ear of popcorn, and told to pretend it was a harmonica. The children arranged themselves in a musical-looking group and put their popcorn harmonicas to their mouths, whereupon the phonograph started up "Yankee Doodle." (Any lively tune would do.) The members

of the group were expected to go through the motions of playing the harmonicas in time to the real music. The children entered into the spirit of the fun, and became almost too enthusiastic in their mimicry.

The rest of the children were eager to try it, so harmonicas were supplied for everyone. (It is best to let the

two groups take turns, as an audience is needed.)

Pilgrim charades followed, under the leadership of Dorothy's mother and big sister.

THE last game before supper was perhaps the jolliest of all. It was called a Wild Turkey Hunt. No—they didn't hide paper turkeys around the room to find. No!

One child was chosen as turkey, and had a bell tied around the neck on a ribbon. The rest of the children were blindfolded, and called the hunters. Of course, their object was to catch the turkey, whose bell jingled at every step. Once caught, the turkey became a hunter, and the hunter who caught him turned into the turkey.

Ready enough for supper were the children when they were summoned to the dining table, where now, instead of the Popcorn Art Exhibit, a row of tiny brown paper wigwams circled the table—one in front of each place on a plate. Each bore a child's name, "Indianified." Thus, Dick Brown had Dickqua, Bessie Perkins had Bessiesoit, Bently Stevens had Bentlyquee.

The wigwams were found to be removable, and disclosed tiny pots of baked beans. With them were served popcorn sandwiches—rounds of baked brown bread shutting together over plump popped corn.

The ice cream was enclosed in individual stockades of chocolate crackers, and there were "Indians" (sometimes famous as "Brownies").

The favors were a great surprise. Each was an animated popcorn boy, who proved to be made of a jumping-jack with a big popcorn ball molded over his wooden head as a foundation. The "popcorn jacks," with their possibilities for antics, were designed to be carried home as souvenirs from Polly Popcorn's nice Pilgrim Party.

NOTE: Words for the Pilgrim charades and simple directions for acting them will be sent on receipt of stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City



At a signal, the first Indian and the first Settler started for their respective goals and, on returning, touched hands with the next in line



Have You These Nuggets in Your Household Mine?

YOU have no idea how useful a piece of rubber tubing or hose is in the kitchen. I measured the distance from the faucets over the sink in my kitchen to the back of the range, and on my next trip to town bought a piece of rubber hose ten feet long and three quarters of an inch in diameter. That is the size which would fit over my faucets.

The first use to which I put it was in filling my large clothes boiler. This had always been too heavy to lift when full, and necessitated numerous trips back and forth from sink to stove carrying water in a smaller vessel. Then I found that it also saved strength and time to use my rubber tube for filling the water kettle or my wash tubs.

It is easy to siphon the water out of the boiler or tubs by filling the tube with water and holding a thumb over each end until one end can be placed in the boiler and the other end in a small vessel of water in the sink, which must of course be lower than the boiler. Both ends of the tube must be under water and no air allowed to get in.

K. S., New York.

I dip an old mop in kerosene oil, wring it out, and work it around each small space of the bed springs. It will save our hands many a scratch, remove all dirt, and at the same time prevent your springs from rusting.

Mrs. M. S., Iowa.

When making over suits and dresses never neglect to brighten up the old buttons I am using on the new garment. Pearl buttons which have become dull and old-looking may be brightened by soaking them in olive oil or a good quality machine oil. When you take them out, rub them hard with powdered pumice, talcum powder, or a good nail polish. They will look like new. The steel buttons which are

so popular may be cleaned with a tooth-brush and suds. If they are rusty, use a cleaning powder. Dry thoroughly and polish. Cut jet buttons often look dingy from the dust which has collected in the design. Clean them by brushing vigorously with a soft brush.

M. K.

Every wife knows that the first places on her husband's shirt to wear out are the collar and cuffs. I find that, at the cost shirting is now, it pays to sit down and rip the collar and cuffs out of their respective places and turn the inside of each out to the right side and fasten back to the shirt. This makes the shirt look nearly new. I have been married for nearly eight years, and know this to be one of the greatest savings that I can accomplish.

Mrs. N. E. H., Pennsylvania.

Several pair of stockings, the feet of which had been patched and darned to the limit, had accumulated in our stocking bag. After our great war lesson of saving, which had been made so forceful, I wondered in what way they could be used. And this is what I did:

After cutting off the feet, I opened the legs and, laying several together, put them in my mop handle. They are excellent for mopping linoleums and floors, as they absorb the water quickly and are easily wrung out.

I also use them in another way: From one pair I removed the feet, split the legs, and sewed two edges together, forming a square. On this I sprinkled a few drops of liquid polish, and now have one of the best dust cloths imaginable.

Girls' ribbed hose are splendid to draw on over the hands and arms as a protector from wind and sun when working in the flower and vegetable garden.

Mrs. M. C. DeL., Iowa.

Make Your Storeroom a Time Saver

IT IS a cold, rainy day in late November. Mary, her hands plunged in a dishpan half filled with hot, soapy water, is finishing washing the breakfast dishes, humming a little tune, when the door opens and John comes in, wet, muddy, and shivering.

"Mary," holding his hands to the welcome warmth of the kitchen stove, "I've got to get the stock up from the lower pasture into the winter feed lot, and I don't want to risk another attack of influenza, so I think you'd better get my winter underwear, heavier socks, and a pair of the mittens I bought at Moore's clearing-out sale last spring. Please bring my old raincoat and water-proof cap, too."

The raincoat and cap are easily found, and she proceeds to look leisurely through the bureau drawers in the south bedroom for the underwear and socks.

Not finding them, she decides that she must have stored them in the closet of the boys' room, and hither she hurries, followed by a couple of sneezes from below.

Rummaging through the shelves, and no longer humming, she tries in vain to remember where she stored the winter garments.

Another sneeze from the kitchen sends her rushing to another room, where boxes are ragged down from shelves, their contents hurriedly dumped upon the floor, where they are left, while she flies to the attic.

Ten minutes more of frantic searching, interspersed with sneezes and hurry calls from below, and she arrives at the last box, saving another trail of disorder.

It is a big box, but digging down through the layers like a terrier digging for a rat,

she emerges with a triumphant light in her eye, dragging forth from its hiding place the elusive underwear, only to find them with three buttons missing and in dire need of mending.

Sewing is out of the question, so she flings them down to the impatient John, who is loudly holding forth on the value of system in the home, and returns to the trail of the socks and the mittens.

Now, no busy farmer's wife has time for an elaborate file system, but if Mary had used this little idea of mine she would have saved herself much time and worry, and John a fit of temper and a bad cold.

I AM not blessed with unlimited storage space; so, while doing the spring cleaning, I store all winter underwear, hosiery, and the like in suit boxes of uniform size, numbering them and stacking them neatly on one of my closet shelves.

Then I copy the number on a card, and opposite each number every item of clothing which that box contains; the number of suits belonging to each member of the family, whether they are mended and whether they will do another year. This card hangs inside the closet door, and shows at a glance where any needed article is.

A similar card hangs just inside the attic door, showing exactly where everything in it is stored.

In my attic I have a sort of bookcase made from packing boxes, in which I file away the papers and magazines I wish to keep. The same little card system is used for it, and in just a few minutes any member of the family can find any magazine he desires.

Mrs. G. E. W., Ohio.



Not So Bad this Month

"Now, that's better! It's the first time the expense figures haven't given me a horrid feeling."

"Why didn't I know sooner about Jell-O and some of the other money-savers?"

It doesn't matter whether you live in the city or country, whether you keep an account book or not,

JELL-O

will help you out, for it is cheap as to cost and it can be made up into more different kinds of good things to eat than anything else.

Every woman who wants to know how Jell-O can help her out will find the information she desires in the Jell-O Book, which will be sent free to all who send name and address.

Jell-O is made in six pure fruit flavors: Strawberry, Raspberry, Lemon, Orange, Chocolate, Cherry, and is sold by all grocers and dealers.

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YOUR FRIENDS

What will YOU give them
for CHRISTMAS?



HERE IS A PRACTICAL INEXPENSIVE GIFT THEY WILL APPRECIATE

IN these days of the high cost of everything, a gift that is both practical and inexpensive is really a blessing. A subscription to *Farm and Fireside* is just such a gift. Practical, because *Farm and Fireside* is a magazine that will be useful to your friends in their everyday lives. Inexpensive, because at only \$1.00 for three years or 50 cents for one year you may send as many gift subscriptions as you choose.

A Gift That Comes 12 Times a Year

Each time *Farm and Fireside* comes to your friend's home, it will bring to him a warm remembrance of you. His appreciation for your thoughtfulness will be the greater as time goes on because he will find in *Farm and Fireside* an everlasting source of helpfulness, good cheer and inspiration.

On Christmas Morn Your Gift Will Be Announced

To each of your friends whom you wish to remember, we will send, so it will reach them on Christmas morning, a beautifully colored lithographed card on which your gift will be announced and your Christmas sentiments expressed. Take our word for it—you can justly be proud to have such a splendid card go out under your name.

THE question of "what to give" is a perplexing one. Suppose you go over the names of friends you want to remember and consider how many of them would enjoy a clean, wholesome, inspirational magazine like *Farm and Fireside*.

Then simply send us a list of their names and addresses, enclose the necessary amount, sign your own name, and we'll do the rest. If you get your order in at once, we will mail the big Christmas issue along with the greeting card mentioned above. This issue will be so interesting, so full of good things, that it will re-emphasize the thoughtfulness of your remembrance. In order that we may give it immediate attention, please carefully address your order containing gift subscriptions to

FARM AND FIRESIDE, Dept. 236, Springfield, Ohio

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Be sure it is a Victrola

Both the picture "His Master's Voice" and the word "Victrola" are exclusive trademarks of the Victor Talking Machine Company. When you see these trademarks on a sound-reproducing instrument or record, you can be sure it was made by the Victor Company. Being a registered trademark, the word "Victrola" cannot lawfully be applied to other than Victor products. For your own protection see that the instrument you buy bears these famous Victor trademarks. They are placed on all Victor instruments and records to protect our customers from substitution.

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A Thanksgiving Sweet You Can Make Easily

By Louise A. Macdonald

A FRIEND of mine ate some cream peppermints at my house one day, and when I called on her a few days later she immediately proceeded to get out paper and pencil to "get my recipe" for the candy. I told her: "Four tablespoons of mashed potato and one pound of confectioner's sugar blended into a smooth paste." I went on to explain that the amount would vary some because of the difference in the moisture content of the mashed potato.

"That's all," I laughed.

It seemed hard for her to believe it.

Of course that is only the foundation, or fondant, for the easiest made and most delicious home-made candy I have ever tried to make. I used to make the cooked fondant, but I never shall again.

When you have made the one pound of sugar and four tablespoonfuls of mashed potato into the desired foundation candy, the next and most interesting step is to divide it into as many parts as you want varieties of candy and to flavor and color them.

We like peppermint extremely well, and you could hardly tell it from the expensive cream peppermints on the market. A little of the fondant colored pink with red vegetable coloring adds attractiveness of appearance, and rose is a good flavoring for this. I also use green vegetable coloring, molding a bit of pale green fondant around a malaga grape. I like a candied cherry inside a bit of white fondant delicately flavored with almond, and our family's favorite of them all is maple-flavored fondant with a raisin inside, and a walnut or other nut pressed on top and bottom of the raisin-stuffed sweet.

easily done. 'Flat, thick little rounds cream peppermints or wintergreens made by pressing the edges of a bit of fondant with the thumb and finger of hand while lightly pinching the top bottom of the piece with the thumb finger of the other hand. Little round marbles are easily made, and look prettily in bright pink, cinnamon-flavored (the extract), or in pale green, which may be flavored with lime or pistachio. I cream of tartar in some green "marbles" with good effect for Christmas.

Pressing the chocolate or cocoanut into a flat mass and cutting into squares makes variety. A round candy hollow on top, then dipped into chocolate, makes a very pretty shape. Let the chocolate drip off well, and dip the confection bottom side down, letting it drip from one side little paraffin, a teaspoonful to the cake of bitter chocolate, will make covering firmer, and it also looks nicer.

Potato candy does not sound as good as it tastes or looks. It is just of the smoothest, whitest, most finely grained consistency that can be produced with any candy paste. I shall never make creamy foundations any other way. Try it, too, for icings for cakes. It's delicious, and "some."

New England Vegetable Hash

IN MASSACHUSETTS, the day after a whole boiled dinner has been served the famous New England boiled dinner which consists of delicious brisket or navy corned beef and potatoes, carrots, turnips and plenty of cabbage all boiled together in one kettle, all with the exception of the beets, which, because of their color, may cook alone—comes the equally celebrated vegetable hash. The corned beef, hot from the kettle it was boiled in, is pressed in weights into bread tins, and when cooled sliced from one handsome loaf on the serving platter, and the hash is a dish to be served with it. Chop all the vegetables coarsely together, adding, if you wish, rough pieces of some of the meat and the savory edges, and at the last minute mix in some of the beet which has been cut up at the last. The beet colors the potato badly if mixed too generously with it. Place all in a little lard, and cook slowly until a little brown on the bottom. Stir and serve to the table, seasoning as desired. The hash is very rich, as the vegetables have been boiled with the corned beef, and partaken of its richness.

C. B. A., New York.

I like peanut-butter centers in some of my candies. I particularly like dates stuffed with the white fondant, then rolled in granulated sugar. You can think up dozens of combinations according to your taste.

The shaping of the candies by hand is

NOTE: Every recipe published in FARM AND FIRESIDE is tested and standardized by Nell B. Nichols, our corresponding house editor. This not only means that each must come up to a high standard of excellence, but also, whenever serving portions are considered, that the recipe has been portioned to serve a family of six.

A Camisole Yoke in Spiderweb and Floral Design



DIRECTIONS for making this attractive yoke will be sent to you on receipt of four cents in stamps, by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

Coöperation and "Elbow Grease"

By Ted Olson, Wyoming

TO-DAY nobody argues about the necessity for good roads. That the need is a vital one has come to be accepted without the possibility of question. And here is the story of how one community approached the problem—a story in which others may find suggestions of value.

In this case it happened to be the council of industry in a small Western town that first took the matter up. The town in question is a progressive little city, the center of fertile farming and ranching country, and in late years a large oil center. Appreciating the need of better roads, and realizing that the funds available from taxation must always be inadequate for such demands, the local council of industry evolved a plan. Briefly, this was to name a certain date as "Good Roads Day," and to issue a call to every public-spirited citizen to devote that day toward the improvement of the main county highways.

This plan found ardent supporters, and the day set was June 22. Advertisements contributed by the two daily newspapers asked for one thousand workers to report duty with tools, a generous lunch and bounded enthusiasm. Captains were appointed, definite areas assigned, and as the volunteers appeared they were assigned to train teams, their individual preferences being consulted wherever possible. By mutual agreement the stores and business uses of the town and several of the surrounding villages were closed for the day,

and employer and employees alike contributed their fund of "elbow grease."

At seven o'clock on the appointed day the teams sallied forth by way of automobile and truck to their respective areas. Naturally, the masculine element predominated, but many wives accompanied their husbands, and greeted them at noon with lunches more than welcome to famished appetites. Under the impulse of cheery enthusiasm and good-natured rivalry the work progressed as paid labor might not have done. There may have been slackers; if there were, they were in the minority. By far the greater number put in a full working day of old-fashioned effort.

WAS it a success? Well, consider the results. A good many miles of road smoothed and leveled, culverts repaired and crossings improved, chuck holes filled in and boulders removed; for the city men, a quantity of healthily tired muscles, a supply of blisters that were displayed proudly as badges of honorably discharged service, appetites such as many an office worker seldom enjoys; for the farmer, the consciousness that the next time he had occasion to make the trip to town, either by car or with team or truck, he would find roads that were roads in something more than name; for farmer and city man alike, a solidarity of feeling, a renewed community loyalty that will contribute much to future enterprises. Was it worth-while? Try it in your county and see.

What Tractors Do on Antrim Farms

By Robert Voorhees

AS JOSH BILLINGS might have said, "It ain't what tractors will do that makes them worth-while, it is what they won't do." It is pretty well known that the capacity of tractors is with a few kinds of work, and their value can fairly well judged by these standards. On every farm there always are tasks that tax the farmer's ingenuity. Without mechanical aid it is often almost impossible to do them satisfactorily.

Antrim Farms is one of the best-known dairy farms in the State of New York. It consists of approximately 530 acres of level land that lie fairly level, of which about 40 acres are in woods and the rest cultivation. The farm maintains a herd of 120 purebred Holstein cattle. That they are high-class animals is proved by the fact that three of them were chosen for the New York State consignment to the annual sale of the National Holstein Association. Antrim Farms is not a show farm by any means; it pays its way, and more too. It would be very expensive to do all the long work on a farm of this size with horses. And with the shortness of the growing season a great deal of that work could not be done efficiently with horses. The owner purchased a 12-27 tractor, and shortly after he bought another one of the same kind. It was found that those tractors were as economical as horses, and, furthermore, that they accomplished more in a given period of time. Fields were

fitted in much better shape, work was speeded up, and a lot of belt work was done that horses could never do.

The longer a tractor is on a farm the more uses are found for it. At Antrim Farms some new task is always suggesting itself, such as getting rid of some huge rocks. Mr. Tractor is taken over to inspect the rocks in question. Skid it onto a sled, hook on the tractor, and away they go to the rockpile. Or, if the rock is too large for one tractor, they just hitch on another, and the field is cleared.

THE farm drainage problem is the Waterloo of many farmers. It takes so much time and money that many farmers shrink from it. Antrim Farms has helped to solve the problem satisfactorily.

John Gerber is the manager of Antrim Farms. He believes farming is a business that ought to pay. A tractor is a big addition to a farm's overhead account, but John Gerber takes his two tractors and makes them pay interest on the investment in goodly measure. He is always discovering new fields of usefulness for the tractor. It is from such men that the tractor receives its greatest recommendation.

The best way for you to find out whether tractors are practical in your community or not is to ask a practical farmer such as John Gerber. His opinions will serve to counterbalance some of your agent's selling talk.



This tandem tractor hitch makes ditching easy on Antrim Farms

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Earn \$50 to \$100 a week

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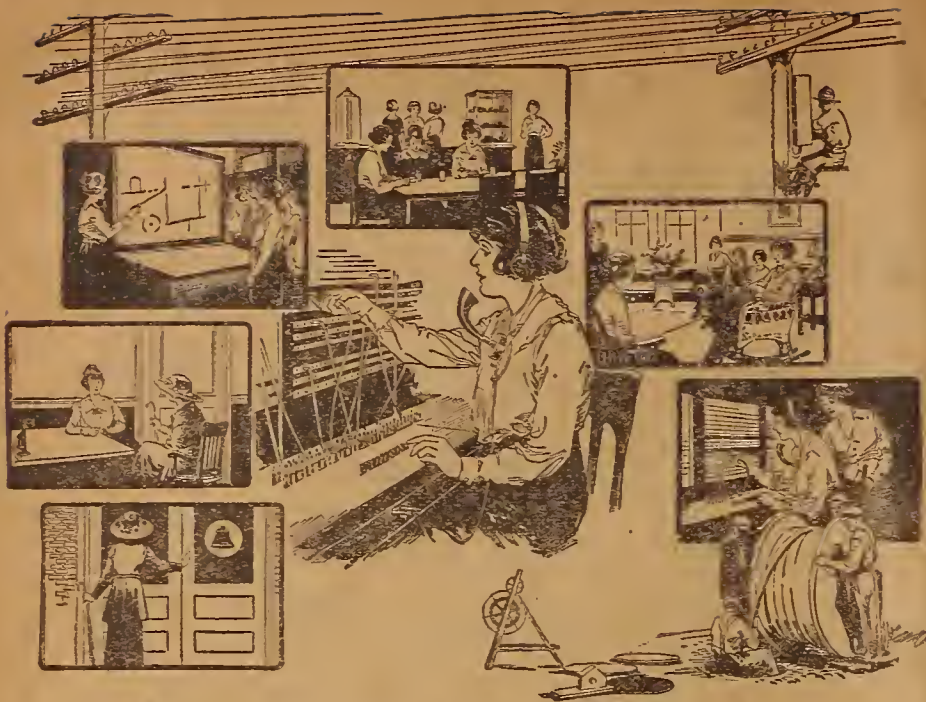
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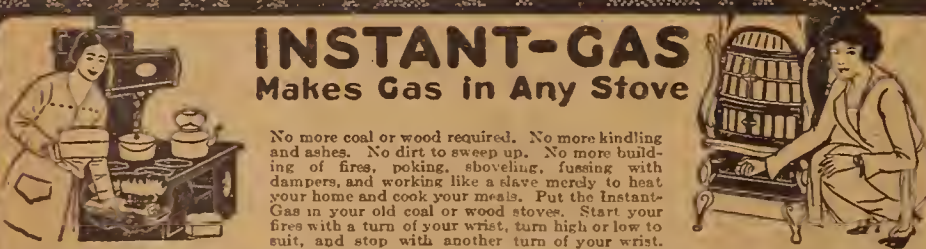


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The Mossback

[CONTINUED FROM PAGE 12]

"He ought to be run out of town!" snapped Jeff Turner of the Paris hardware store. "I wouldn't advertise in this bally little handbill if he gave me the space for nuthin'."

But, aside from a few telephone call-downs which the boy should have estimated at a better worth, nothing came of their wrath. Twenty-four hours later the "Blade" came out again, pitifully devoid of any advertising but Alec Potherton's and a few of his sore-head friends who were slated for the board themselves.

IN three-column heads and fourteen-point type, it "tore to pieces" old Professor Hale's record as a public instructor and superintendent of the schools. It called attention to the fact that the professor had received his education in some forgotten academy around Civil War time, and demanded to know whether Paris must tolerate such out-of-date methods in its schools as the old professor advocated. One by one, it reviewed the old man's inefficiencies and shortcomings, most of the material supplied by Alec Potherton, until it made poor old man Hale out something between a wife-beater and a horsethief of the deepest dye.

In the back of his store, that night, Alec read the stuff through, winced a couple of times, pulled out his "Laws of Business," and tried to find the detail of the law of libel—but eventually called Joe up on the telephone and congratulated him in language eighteen inches high. Then, lowering his voice, he said:

"Now go after 'em for employing a bunch of female old has-beens on their teaching force."

The boy went to it. And among other things, in boxed rules on his front page, he printed this exquisite morsel of propaganda:

Our school board is a wondrous thing
Of skirts and beards and moss and fears,
The Rule of Three is still in force,
Our schoolma'ams get their jobs through
tears.

To get a place at teaching school
In our town since this board began
Is not a case of "normal school,"
But "miss your chance to catch a man!"

To know your job, to handle kids,
To teach them modern things—no chance!
Our school board's special love is for
The frayed-out ends of past romance.

So then, you girls whose faces plain
Kill all your hopes of home and kids,
Don't lose your nerve—our taxes will
Some day fat out your sparse old ribs!

Paris read these lines that night with varied emotions. A few people it struck as being funny. Others shook their heads, and said there was nothing funny about it. The poem was entirely uncalled for and vulgar and libelous. The general consensus of opinion was that the time had come when Paris men ought to show this young man that he was out of place in their midst.

BUT in one cheap, stuffy little bedroom up-stairs in the rear of Mrs. Mathers' School Street boarding-house there was one person who read those lines that night with a pale face, and upon whose heart their sentiment fell like burning, blistering acid. It was little Miss Lasher. The offensive newspaper fluttered down to the straw matting. With her arm on the edge of the window sill, silhouetted in the afterglow of a mellow spring sunset, she gave free vent to her tears, and wept her heartache out there in the darkness with no one to see.

At eight o'clock that night Sam Hod came back from supper. He found Pinkie Price in the office with that evening's copy of the "esteemed but loathed contemporary" spread out before him. The high-school reporter relinquished his copy to his employer, and Sam sat down at the

exchange table and read the whole attack through very carefully.

"Hang!" he swore sorrowfully. "Joe's doing the same thing in his own plant that he did when he worked in here. He's makin' fun at the expense of people who can't hit back. And—it's—got—to—stop!"

For several minutes he sat smoking and staring up at the art gallery. Then he said: "I'm going to make Joe meet Miss Lasher face to face, and teach him a lesson he deserves. Pinkie," he ordered, "run over to Mis' Mathers' place, and ask Miss Lasher to step over to the 'Telegraph' office. When you've got her headed here, run across the street and tell Joe Dicks that the Mossback thinks kindly toward him and wants to talk with him about an important matter. Leave the rest to me."

"Yes, sir," said the boy; and off he started.

Pinkie turned into School Street, and not far from the corner he overtook Broken Jones.

"That's a dirty, rotten thing in to-night's 'Blade' about such as Angie Lasher," declared the hunchback. "I'm visitin' Angie for the first time in fourteen years, to ask her shall I punch his fresh young head for that poetry."

Pinkie smiled to himself. Together they waited on the piazza, a moment later, for Mrs. Mathers to answer the bell.

"Angie's up in her room," announced the portly landlady. "You two can come in the parlor, if you'll wipe your feet careful. I'll call her."

The two went into the front room, and found seats on the out-of-style red-plush parlor chairs.

MRS. MATHERS had not been above stairs but a few seconds before there came a woman's scream.

"Mr. Price! Mr. Jones! Come up here! Quick!"

Pinkie leaped out of the room and up the stairs with a great clumping of his big feet. He mounted the stairs two at a time, Broken Jones close behind him.

On the upper landing Mrs. Mathers stood. Her face was white. She was too frightened to talk plainly.

"Her keyhole's stuffed with cloth. There's cloth under the door crack, and the door is locked. You can smell the gas away back here!"

Pinkie jumped for the door.

"Can I bust it in, Mis' Mathers?"

"Get her out somehow! Get her out somehow! Angie may be dyin'! Oh, poor Angie!"

Pinkie threw all of his athletic young weight against the flimsy panels. A second try broke the lock; a third loosened the hinges. The door careened inward, poised fell over with a thump and a hollow rattling against the cheap wooden bedstead's foot board.

The boy went in. Deadly fumes of the thick gas made his head reel. He held his breath. By the dim light of the hall lamp he saw the figure of the life-weary little schoolma'am on the bed. He lifted her weight awkwardly and stumbled out—and collided with Broken Jones coming in. Broken Jones lifted a chair clumsily, and smashed out the one window. As the glass tinkled on the cellar bulkhead below, great drafts of pure, fresh air came into the room. "Bring her into my room!" cried Mrs. Mathers. "Oh, Angie—Angie! To think after all these years! And the fight you've always made against everything!"

"It was the dirty, rotten poetry in to-night's paper made her try it!" cried Broken Jones hoarsely.

His face was white. For the first time Mrs. Mathers saw tears on his cheeks, and they looked—ludicrous. But there was nothing ludicrous about the look in Broken Jones's eyes.

"Some one'll pay for this!" he declared.

terribly. "They got to answer to me—Jones!"

"See if you can bring her round, Mis' Mathers," begged the boy. "I'll run and get a doctor, and tell Sam Hod!"

Fifteen minutes later, Broken Jones—wild and hatless and disheveled—half ran and half fell into Frank Benoit's cigar store on Cross Street.

"Boys!" he cried thickly. "Angie Lasher's dyin'! She tried to kill herself 'cause the poetry in to-night's paper just plumb busted her tired heart! He did it—the city feller who thinks he can run this place by callin' us names when he likes!"

Somebody laughed coarsely. Came an awkward silence. Somebody swore. A second oath was added to the first. Broken Jones leaned his poor hunched back over the edge of one of Frank's cigar cases and wept convulsive sobs.

A mob is a queerly made thing. Not one of the men in the cigar store had any idea of starting one as they gazed uncomfortably and sympathetically at the weeping hunchback. But some of them started suddenly into the street, cursing—some who had relatives among those whom the Dicks boy had handled roughly. They collided at the door. Someone shouted:

"He ought to be run out of town!" Came another curse and a guttural: "His place ought to be smashed so it don't occur again!" There was more piling into the street, and a cry: "Let's do it!"

There was some disorderly colliding with pedestrians on the walk. A knot of loafers turned abruptly and came over to find out what was up. There was suddenly a whole walk full of shoving and fighting and gesticulating and confusion and angry epithets and threats. Then, at the psychological moment, Broken Jones himself touched off the explosion by snatching a club from somewhere and declaring he was going to "show the fresh young city chap his place!" He started forward, and the mass of hoodlums fell in behind to see him do it. And the mob was born.

They took the middle of Cross Street—there was no room for them on the walks. In the vanguard was Broken Jones, a strange, wild, outlandish figure. Before they had gone two blocks, at his back was a wedge of howling, whistling, vociferating, hooting humanity immediately out of all police control.

When they reached Main Street, scores more joined in to see what the excitement was all about. Up Main Street went the crowd at increasing speed amounting to a half run. Some of the excited hoodlums picked up brickbats and heaved them promiscuously through passing plate-glass windows. That made panic in the Main Street stores. The crash and the smash and the cries only added to the excitement and mood for destruction. The rack of papers in front of Service's news-room was knocked down; Tony Messini's fruit stand was sent flying. The Cobb City trolley came to an abrupt stop on the Main Street switch. The rioters leaped aboard and stripped the car of everything suitable for weapons of assault.

Then the "Blade" printing office came in sight. The insane mass charged the place in one invincible juggernaut of human destruction.

THE print-shop windows were first to go. Dozens were cut by the flying glass. The sight of the wild, bloody figures in the chaotic mass only added to the general hysteria. Into the office they broke, the half-witted Jones at their head. Counters were quickly overturned, files sent flying. Desks were skewed around and smashed. Type cases were torn out, lifted aloft, and their contents showered over the heads of the mass in stinging slivers of lead. The proof press went over—the big roller fell heavily and crushed a rioter's foot. He emitted a bellow of rage and agony, and struck out blindly with his fists. Then the fighting became general. Inside that job plant was an ever-increasing mass of surging, struggling, fisting, swearing human pandemonium.

Joe Dicks had been working at his machine when he heard the first roar of that devastating mob. His little wife was working close by at a type case. Conscience made a coward of Joe. He knew instinctively what was afoot.

"Out of the back way, Nan! I'll take care of myself!"

His wife's composing stick clattered to the floor. She stooped and lifted the child from the carriage. When the window gave way with a terrifying crash, she ran down

the room, pausing irresolutely by the big drum press. There fear for her husband's safety held her. And when the mob came through and collared him, scream after scream came from her. Then she turned deathly white and fainted, the baby in her arms, but the two of them mercifully protected by the big newspaper cylinder.

Then, above the crashing and smashing and fighting and cursing of that mêlée came the fatal cries of "Lynch him! Lynch him!" And a big, hairy man who worked in the process works core-room collared the Dicks boy and jammed him with a cruel smash-against the west wall.

The boy tried to defend himself. His grasping fingers tightened around a proof brayer. He struck out insanely. The hairy man went down and was trodden underfoot. But in that instant other hands laid hold of Joe. He was jerked abruptly in another direction. He felt himself being lifted bodily. He went through the door on the bobbing heads and shoulders of the mass.

"Get a rope!" cried hoarse voices. "Smash the hardware-store window and get a rope!"

The next instant something hit the Dicks boy. His head seemed to explode. There was a searing

pain all through him. He floated, floated, floated gently away on a merciful cloud of darkness—into oblivion.

They smashed Jeff Turner's window in a twinkling and unreeling thirty feet of new hemp. It was thrown out. A noose was slipped around the boy's wilted figure.

"The telephone pole! The telephone pole!" The boy's body was torn suddenly through the dust and dirt. Men who had fared badly in the fracas, and were maddened with pain and the desire for revenge, caught hold of the end that shot in the air. Poor Joe Dicks! It looked as if he were done for!

Only Joe Dicks wasn't done for.

THROUGH that frenzied, fighting, cursing, milling mêlée came a burly figure—the figure of a hatless and coatless man. And he was doing some cursing himself. He was doing more than cursing. He was fighting also. He was fighting dynamically. And wherever he hit out, men and heads were giving way before him. Sturdily at his back came a second slither and more youthful figure. But size was immaterial—the younger man was accounting for as many heads as the older.

The secret of their progress lay in their weapons. They were armed with ball clubs. They had laid hold of the bats that the Paris boys had left in our office years before, after an awful drubbing at the hands of the North Foxboro nine. And the bats made excellent bludgeons. It is really surprising what a man can do with a ball club when he desires to get attention and action in the center of a crowd.

"Stand back!" roared Sam Hod, breathless, red-faced, hysterical himself. "What are you boys thinking of? It's murder you're committing, but you're too crazy with excitement to know it! You can't lynch a man up here in New England! The town won't stand for it! Back out of the way there! Give it to 'em, Pinkie! Lambast their eternal daylights out and teach 'em common sense and coolness and reason!"

Through the great riot plowed the fighting editor, leaving a wake of battered and bruised and bleeding humanity behind him. Straight through to Joe Dicks' limp and unconscious figure with the halter about its head he clubbed his way, and secured the boy with his one free arm.

"I'm a peaceable man!" he roared. "I'm a peaceable man and generally known as something of a mossback. But I ain't forgotten how to get law and order and justice. Burrows! Jamison! Barnes! Waterman! What do you think you're doing?" And he swiped at four young men who stooped for the rope attached to Joe Dicks' neck.

There is nothing that will bring a mob to its senses quicker than calling its individual members by name. It fixes responsibility for the damage afoot, and when responsibility begins to be fixed the mob spirit immediately subsides. Lifelong habits of morality and obedience to law and order reassert themselves.

Still hurt and hysterical, but somewhat cowed and sullen, they permitted the "fighting mossback" to secure the unconscious boy firmly. Sam dragged the young editor back across the street, across the car tracks and the curb and the walk. He swung Joe around and dumped him in on the floor of the "Telegraph" office, and

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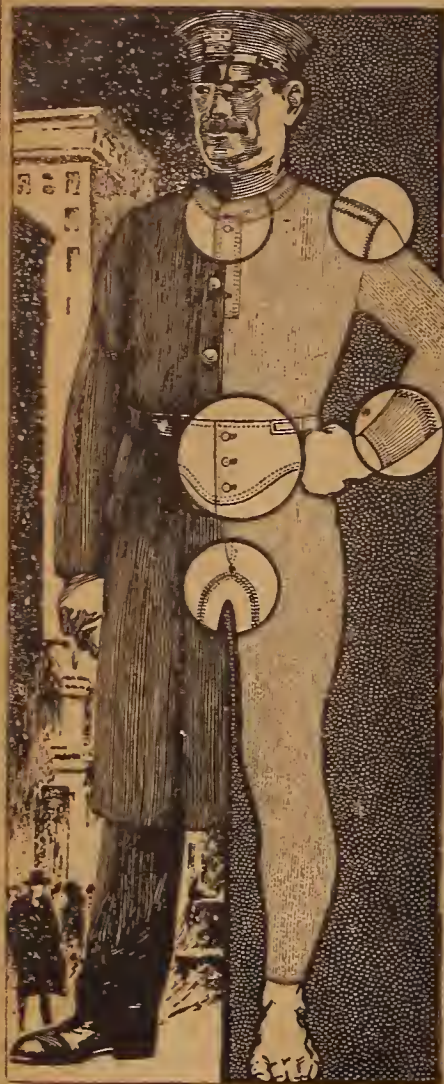
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pulled the door closed. Then he turned and faced the crowd.

But the scrap was over. Individual mischief makers had been recognized, and panic had seized them at the retribution that might follow. They scattered.

The editor stood pugnaciously in his own doorway, his clothes half ripped from his torso, his bronzed cheek bleeding from a gash near one eye, his knuckles swollen and battered.

"The cowards!" he cried. "The cowards! And I was just getting ready to fight!"

He turned when he saw the danger was over. He stepped back inside, and laid his club on the exchange table.

"Half a dozen times in the past five years I've been on the point of throwing them war clubs out," he said. "Now I know what they're good for. They beat editorial firearms all hollow!"

ALL night long, on a bed in Sam Hod's house up on Walnut Street, the Dicks boy babbled senselessly and the little wife cried outside.

Then, at noon of the next day, Sam entered the bedroom to find him sobbing like the fatherless, friendless, and altogether pitiful lad that he was. The editor smiled sadly. He swung over a chair.

"Feeling better, sonny?" he asked. "Narrow squeak you had! Hope it won't happen again."

"Oh, what'll I do? What'll I do? They've wrecked my shop and ruined my paper. My money's all gone, and I haven't even got a job to support Nan and the baby—"

"Sure you've got a job, sonny. On the 'Telegraph,' my boy. You see, I want a boy to go around this town and collect locals. I want someone who can write bright and spicy little items of human interest for the 'Telegraph' and liven up its prosy old columns. But it's got to be someone who can watch out for and write stories of local interest that haven't any gaff in them to jab into human folks and leave a little hurt, and you—"

"But me—for that job, after what's happened?"

"Certainly you for that job, sonny. Why not? After what happened I couldn't get a better man if I traveled a thousand miles and searched a hundred years. What's happened has vaccinated you, sonny—vaccinated you against being ram-bunctious and impertinent and given to any more fits of literary indiscretion. It's been a tough lesson, sonny, but I think you've learned it—"

"But the town won't stand for me!"

"Oh, yes, they will. I've had Main Street cleaned up and settled mostly for the promiscuous damage. I've had your shop straightened out—the damage, outside of some smashed desks and spilled type, doesn't amount to a great lot. You can offer the place for sale, and reimburse me after you get your money. The town'll stand for you if you go to each man whose property suffered or whose feelings you've hurt, and tell him you're sorry and apologize like a man and show him you did it

all through misunderstanding and thoughtlessness and inexperience. They're very human folk in this town. If you've learned your lesson and confess your misstep, a hundred hands will be extended to help and guide you. Because all of us make mistakes, sonny. All of us do things, at times, that we're sorry for afterward and wish we could undo. At heart ordinary small-town folks are lenient and forgiving and sympathetic and easygoing. The person who declares to the contrary hasn't lived long enough among them to get down to the bed rock and the hard pan of human nature and know them thoroughly."

The Dicks boy was humbled—terribly humbled and ashamed and penitent.

"And I called you a mossback!" he said. "Well, maybe I am a mossback. But it's better to be a mossback than a rattle-brain, any time, sonny. After all, come right down to it, and what are mossbacks? Aren't they mostly people who have gone through a lot, and learned to make haste slowly, and be cautious and long-headed and given to looking at a proposition from all sides before being willing to plunge ahead? Aren't they folks who have paid for their experience with money or shame or bitter experience, and learned to distinguish the things that count from the things that don't really count? All of us gather a little moss as we grow older, sonny. All of us cool down and go slower and think before we act. There have to be mossbacks in society, sonny, to act as balance wheels for those who would make the world over in a day and do a rushed and badly botched job."

"I've run a little paper in a little town for over a quarter century, sonny, and I've learned that going carefully and making sure I'm right about things, and being considerate of other folks' feelings, and printing only things I'd like to see printed about myself if conditions were reversed, is the course that pays best in the end. Now, how about it, sonny? Do you want to come back and take that job?"

But the Dicks boy couldn't say anything. "All right—then it's all settled," announced the old editor.

LEAVING the thoroughly chastened boy alone with his girl wife, whose eyes were shining through her tears, Sam passed out of the room and the house, and walked leisurely down to School Street.

He turned in at Mrs. Mathers' gate, to report a local for that night's "Telegraph." He wrote it himself:

Miss Angelina Lasher, who has made friends by the hundreds during her long term as a successful school teacher in our town, is convalescing very successfully from a recent indisposition at her home with Mrs. Ebenezer Mathers on School Street.

Then he heaved a sigh, lighted a cigar, and turned to his list of "Accounts Receivable" to learn where he could collect eighty dollars' worth of bills to meet his pay roll on the following afternoon.

"This business is just one dam' thing after another," he commented bitterly.

[THE END]

Things I Have Done to Lighten My Farm Work

By John Jackson, Michigan

OWING to the present scarcity of transient farm labor, the question of carrying on the farm with as little outside help as possible is a subject of considerable importance. One of the principal ways by which this can be accomplished is by the use of labor-saving machinery.

I use three medium-sized horses when fitting or sowing any kind of crop. When plowing a field, except fall plowing for a spring crop, I use a planker made out of three or four planks bolted together, on which is fastened an old mowing-machine seat. Just before quitting time at night I hitch my horses to this planker and go over what has been plowed during the day. This levels off the plowed ground, retains the moisture, and saves at least one third of the work in fitting the field for a crop.

On my steel-frame disk drill there was no seat to ride on. So I procured a plank as long as the drill was wide, and had two V-shaped irons made. These were bolted to the ends of the plank, and the upper ends of the irons were bolted to drill frame. These irons are made just long enough so that when the drill is in use the plank is about one foot above the ground.

By standing on either end of this plank it is very easy to guide my three-horse team, and I do not get very tired by the time night comes. This attachment is a great help when filling the drill with grain or fertilizer. I have other tools with fixed seats which make my farm work a pleasure instead of drudgery.

By planning my work I am able to save a lot of time as well as worry. If I made a specialty of dairying, or planted sugar beets or some such crop, it would require hired help all the year, which would make more labor for my wife as well as myself.

As I got very satisfactory results from my present mode of farming, it is doubtful if a change would pay in the end, even if I could make more money. Instead of paying out a portion of the income of the farm, which would be necessary if a different mode of farming was followed, my wife and I use this money for a pleasant excursion almost every season.

In this way we have traveled from the Atlantic to the Pacific, and through different parts of the country, and have found much pleasure in life, even though our bank account isn't large.

How I Make Money - Right at Home!

LOOK at this check for \$26.50—payable to me.

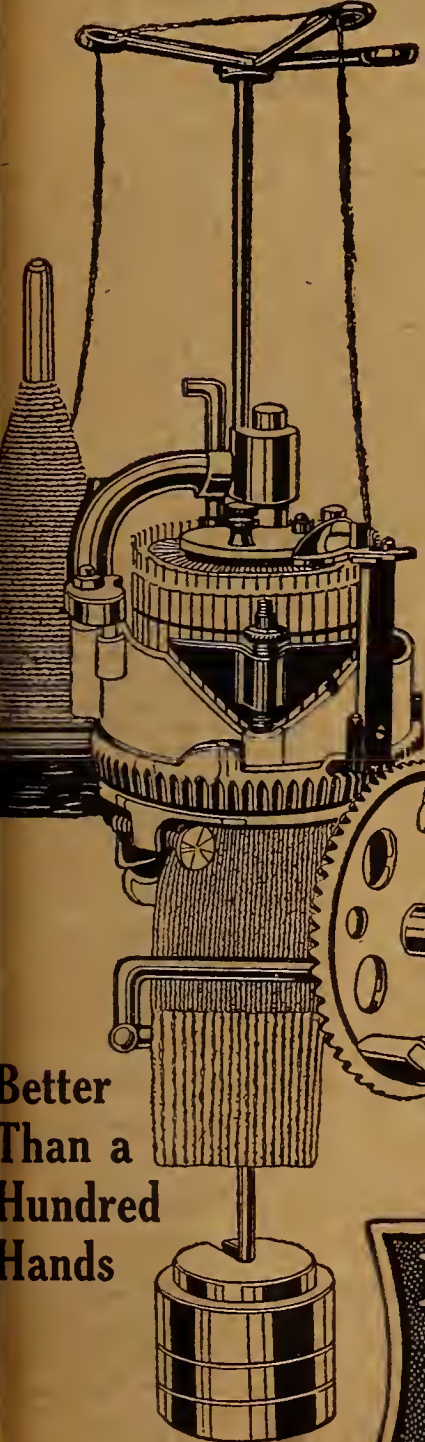
"I made this money easily and pleasantly—in the spare time left over from my housework and the care of Bobby and Anne, my children. In fact, they helped me to make it. I make as much, and often more every month.

"Before I found this new, easy way of making money right at home, in privacy, freedom and comfort, my husband's salary, while sufficient to meet our absolutely necessary expenses, was really not enough to give us any of the little extra pleasures that mean so much to a family. Everything we eat or wear has gone up so high, and salaries haven't kept pace!

"But now we have more than the necessities—we have beaten the terrible old H. C. of L.—and we have our little luxuries and amusements too.

"How do I do it? Simply by knitting socks. No, not by the slow old process of hand-knitting, which took almost a day for one sock, but by using The Auto Knitter, a marvelous, but very simple, easily-operated machine. It turns out fine, seamless wool socks with almost magical speed. Now that I have gained practice with The Auto Knitter I often make a sock in 10 minutes!

"And the best part of it is that I have a guaranteed, constant market for every pair of socks I make, at a guaranteed price. The Auto Knitter Hosiery Company of Buffalo has contracted to take every sock I can make. I simply send them the finished socks, and back comes my check by return mail, together with a new supply of yarn to replace that used in the socks sent them.



"Free Yarn Sent with the Machine and They Pay Me for the Socks"

"The Auto Knitter Hosiery Company is an old, firmly established American corporation, engaged in the manufacture of high-grade seamless socks. They have always preferred home manufacture to factory production. They believe in the independent employee, and know from experience that the best work is that done by well-paid, contented people, working in happy homes.

"The company's world-wide business connections give them an enormous market for socks—everybody, everywhere, needs them—and the company constantly needs more workers to make socks, in their own homes. They need you.

"When you decide to become an Auto Knitter worker, as I did, The Auto Knitter Company will make a contract to pay you a fixed, guaranteed wage, on a piece-work basis. In this contract you take no risk. You can work for them as much as you want, or as little as you want—spare time or full time. And for every shipment of socks you send them you will get your pay check—promptly.

"With the machine they send a supply of wool yarn FREE. They also supply FREE the yarn needed to replace that which you use in making the socks you send to the company.

The Auto Knitter

A turn of the handle, and 60 and more smooth, even perfect stitches are knitted. Many of our workers report that, with The Auto Knitter, a completed sock can be made in 10 minutes or less. When The Auto Knitter goes into action it is just like having many families of skilled knitters working for you. It makes the sock—top—body—heel—and toe—without removal from the machine. It weighs about 20 pounds, and can be clamped to any ordinary table or stand. Easily learned. Experience in knitting and familiarity with machines are unnecessary. Complete instructions about how to use The Auto Knitter are sent to every worker. The Auto Knitter is to hand-knitting what the sewing machine is to hand-sewing.

Better
Than a
Hundred
Hands

Find Out How You Can Make Money With The Auto Knitter

"The yarn supplied is the well-known Qu-No Quality Brand, made especially for The Auto Knitter. It is the softest, the warmest, the strongest, and uniformity in quality, weight and shade are always obtainable. You receive a Free Shade Card that contains samples of Qu-No Quality Yarns.

"You are, of course, at liberty to dispose of the output of your Auto Knitter as you see fit; you can also use The Auto Knitter to make, at a remarkably low cost, all the hosiery your family needs—wool or cotton.

"But remember this: There are absolutely no strings tied to the Wage Agreement; it is a straight out-and-out Employment Offer at a Fixed Wage on a piece-work basis—a good pay for your services alone."

Read What Satisfied Workers Say

The Auto Knitter gives you the opportunity to make money during your spare time. It also gives you the chance to devote your entire time to the business, and thus, to be independent of bosses, rules, time-clocks, working-hours, etc. The Wage Contract is in no sense a disguised "canvassing scheme," "agency" or "open a store" proposition. Here is the proof—read the evidence from some of our workers.

- ### More Than Two Dozen Pairs a Day

The Auto Knitter has proven very satisfactory. The work done on the machine cannot be surpassed. The only requirement is to learn the work and then work. The Auto Knitter is very speedy and any person of good judgment can knit from one to two dozen pairs of socks a day, and if they want to push the work they can turn out more. The treatment by The Auto Knitter Company is the best, and I have found them to be absolutely reliable.

BERLIN, N. Y.
- ### Promptness Appreciated

Am sending you today a shipment of half hose. I wish to compliment you on the promptness with which you return replacement yarn and checks.

GAYS, ILL.
- ### Getting Along Fine

I am sending you another lot of socks today. I am getting along fine with my machine, and thank you for the promptness with which you have accepted and paid for my hosiery.

LIMESTONE, TENN.
- ### Pleased With Treatment

I have received my replacement yarn and check. I am well pleased with my machine, and your treatment of me.

MANDALE, TEX.
- ### Thanks for Attention

I have just sent you a lot of half hose made by my Auto Knitter with yarn supplied by you. I am glad to avail myself of the opportunity to tell you how much pleased I am with the machine and what pleasure it gives me to work it. I also wish to thank you for the courtesy and prompt attention you have always shown me.

BUFFALO, N. Y.
- ### A Steady Worker

In this same mail I am sending you 7 1/2 pair of half hose. Hope they will reach you all right, please send replacement yarn, and wages, and I will send another shipment soon.

STATE COLLEGE, PA.
- ### Regular Prompt Pay

I am sending by express three dozen and 9 pair of half hose, being the product of ten pounds of yarn. Please send me 10 pounds of replacement yarn and wages.

MILTON, WIS.

Write Today for Our Liberal Wage Offer

No matter where you live we want you to know all about The Auto Knitter. We want to tell you of the pleasant and profitable place ready for you in our organization, and the future you can make for yourself with The Auto Knitter.

We want you to compare our work, and the money that is in it, with what people are paid for long, hard, grinding toil in office, store, mill and factory. We want you to know the substantial amounts that even a small part of your spare time will earn for you. Then we want you to read the glowing statements

of our perfectly satisfied workers, and learn how, if you desire, you can have your own home factory and sell your output both wholesale and retail.

Remember that experience is unnecessary, that you need not know how to knit. You do not have to even know how to sew. The Auto Knitter does the work.

Action is the word. Write your name and address now, this minute, on the coupon and get this coupon in the mail at once. Enclose 2c postage to cover cost of mailing, etc.

Send Coupon Now

THE AUTO KNITTER HOSIERY CO., INC.
Dept. 2611K, 821 Jefferson Street, Buffalo, N. Y.

Send me full particulars about Making Money at Home with The Auto Knitter. I enclose 2 cents postage to cover cost of mailing, etc. It is understood that this does not obligate me in any way.

Name.....

Address.....

City.....

State..... Farm and Fireside 11-20

The Auto Knitter Hosiery Co., Inc.
Dept. 2611K, 821 Jefferson Street, Buffalo, N. Y.



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Send me your name and address today and I will tell you how you can easily earn a handsome high-grade wrist watch. Two styles, one for boys and one for girls. Hundreds have been pleased. Write quick for my easy plan.

D. S. STEPHENS, 160 W. High St., Springfield, Ohio



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STORM SASH HARDWARE



is easy to apply and operate.

When Jack Frost comes roaming around the farm, will your windows keep him out or let him in? Now is the time to prepare your home warm and snug for this winter.

Write us for Storm Sash Hardware Booklet FF11 and visit your hardware dealer for information, too.



The Stanley Works—New Britain, Conn., New York, Chicago.

How I Got Started With Purebreds

[CONTINUED FROM PAGE 13]

now to go through the books for an exact account of profits, but it's like this: while with scrubs I was going steadily down-hill, with purebreds I am just as steadily climbing—and I owe no man a penny!

I never give my young hogs too much corn, but let them run on some kind of green pasture, spring, summer, and fall. They have all the pure water they want at all times. I feed them slop made of shorts and ground barley, etc., and once or twice a day some corn.

A man cannot afford to waste high-priced feed on scrubs and grades. My hogs have clean beds to sleep in, free from drafts and winds, and my sheds are arranged to let light and sunshine in. Then I change the bedding often, and use the old bedding for fertilizer.

My venture has been an unqualified success.

J. S. WHITESCARVER, Galena, Kansas.

A Purebred Dairy for \$600

SECOND PRIZE LETTER

I GOT my start with purebreds because of the lack of "stick-to-itiveness" on the part of the other fellow. It was this way: I live on the border of Livingston and Oakland counties, Michigan. Eastern Livingston is in what is known as the Detroit Milk Area. Livingston County is the banner county of Michigan in purebred Holstein cows, and is also the banner county in the United States in the number of purebred sires.

I started in farming five years ago with the scrubbiest seven cows you ever looked at. I was heavily in debt on my land, which was none too good. The first thing I did was to put my best piece of land into alfalfa, for to my notion you can't succeed with cattle without leguminous hay. It took me two years to fit and get that nine acres into alfalfa, but under the direction of our county agent I secured a reasonably good stand. Then I began to look around for some young purebred stuff. I found heifer calves impossible, as heifer calves were selling at \$100 when four weeks old, and hard to get at that. Our local banker was not disposed to loan me money to buy at that price, as I was already carrying about as much indebtedness as I could stand.

Finally, I had a talk with our local auctioneer, who told me that sometimes he had a sale where there were one or two purebreds, especially young stuff, put up with a lot of grades, and that they usually went for about the price of grades. I told him to let me know if anything like that showed up. One day he called me up, and told me that he had a sale with three head of purebred Holsteins, a three-year-old due to freshen in September, an eight-months-old heifer, daughter of the three-year-old, and a four-months-old bull calf of excellent breeding. The owner was a well-known dairyman, and guaranteed them all, but said he was milking 30 grades and selling milk, and for his purpose the grades were just as good. I sold a five-year-old grade cow to him for \$150, and gave \$150 for the purebred three-year-old, \$65 for the heifer, and \$40 for the bull.

Spring's work had begun, there was only a small crowd at the sale, and there were no enthusiasts over purebreds but me. These men were on the lookout for heavy milkers, as milk was then bringing \$4.05 a hundred. They simply would not look at young stock. They were dealing for that day, while I was building for the future. The following winter I attended a sale, where I got a nine-months-old heifer for \$65. Last fall I bought two high-bred fifteen-months-old heifers, for which I paid \$300. They haven't freshened yet, but are

bred to my 29-pound sire. My total investment for the six head was approximately \$600. I shall buy no more until it becomes necessary to change my sire.

Now the question is, "Have I made any money?" My first three-year-old has freshened twice, both being bull calves, which I sold for \$75 before they were two months old. The other two heifers have freshened once, both having heifer calves, which I am raising. All three of these are fine, large cows. This year I shall have five purebreds to freshen. A conservative value of my stock is given as follows: One cow five years old, \$300; one cow three years old, \$200; one cow three years old, \$200; two heifers twenty-two months old, \$300; two heifers six months old, \$150; one bull two years old (29 lb. A. R. O.), \$150.

I have received twice for my purebred calves what I would have got for grades, and my purebred cows are bigger milkers than any grades I had. I sold my grades at their best producing period, and, owing to price of milk at that time, I got a good price for them when you consider their breeding. I now have a good start in purebreds, and consider I am better off than the man who depends entirely on milk for his income.

W. E. A.

No More Scrubs for Me

THIRD PRIZE LETTER

UNTIL 1915 I had had no experience with purebreds. At that time I decided to try a purebred Jersey cow and a trio of registered Duroc-Jersey pigs. The Jersey cow proved profitable, and in 1917 I bought a purebred Jersey heifer one year of age, and at the present time have the original two and eleven other cows and heifers that are descendants of the first two.

I raised my Durocs and have made my meat of their descendants, have sold \$1,000 worth on the market and sold enough of their descendants to run well up into four figures. In addition, I have a nice little herd of eighteen that is well worth \$2,000 in fact, I would not sell them for that. My herd boar will weigh 800 pounds in breeding condition, and is well worth \$1,000.

In 1918 I bought a few S. C. Brown Leghorn chickens, and now have a flock that would be a bargain at \$500. They are not for sale, however, as I am culling and breeding them so as to have as good as the best. I am sure they have made a clear profit of \$2 each, above cost of keep, as some of the hens laid 200 eggs during the past twelve months.

I like purebreds because they make a more economical use of feed than scrubs do. Then, a man raising purebreds will take greater pride in them than he will in scrubs.

My purebreds enabled me to buy land last fall, and to make a nice payment on it, and they are going to put me over with another nice one this fall, besides furnishing money to put 300 rods more of net-wire fencing on the place.

No more scrubs for me—especially scrub males.

V. CONAWAY, Belden, Mississippi.

Each Hen Earned \$3.83

FOURTH PRIZE LETTER

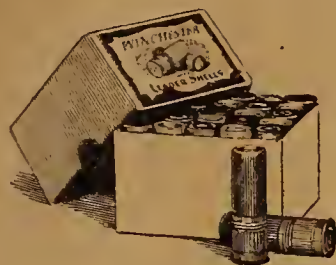
MY MOTHER'S chickens were all colors of the rainbow, ranging in size from a Bantam to a Brahma. The white ones appealed to me most with their yellow legs and red combs and wattles. I resolved if ever I had a home of my own I would have white chickens. So I sent for a setting of White Plymouth Rocks, from which I hatched nine chicks and raised seven, the



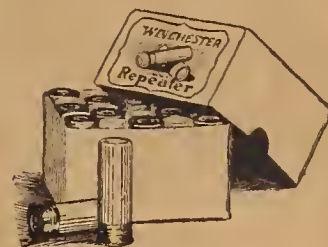
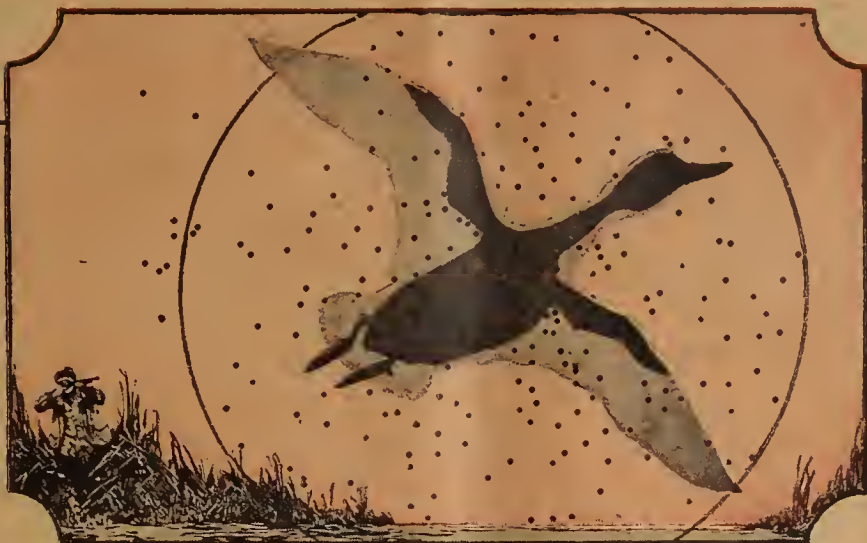
WINCHESTER

1866

1920



Leader



Repeater

Winchester Model 12
Hammerless Repeating Shotgun

DUCK FEATHERS DON'T FOOL THE PERFECT PATTERN

DUCK HUNTERS praise the *Winchester pattern*—that even distribution of the high-speed Winchester shot charge which will not let duck vulnerability get through.

They know that the fattest big wild mallard drake is largely feathers. That to bring him down neatly at average range, they must hit him where he is vulnerable. And hit him *hard*—not tickle his feathers or scratch his skin with a few pellets.

The very careful combination of Winchester gun boring and Winchester shot-shell loading, results in great gun-and-shell harmony. Producing a shot pattern remarkable for its even distribution, yet without any loss of combustion speed or shot velocity.

The pattern shown above was made at 35 yards, with 1¼ ounces of *standard* No. 5 shot; 30-inch circle; mallard duck

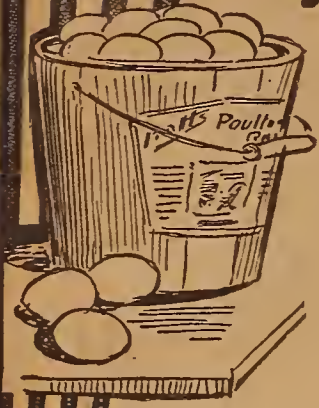
drawn actual size. It was shot with a 12-gauge Winchester Model 12 Repeating Shotgun of standard grade, and an ordinary Winchester Repeater Shell.

Shoot a Winchester Hammerless Repeating Shotgun, Model 12. Or if you prefer, a Model 97, with exposed hammer.

And always use Winchester Shells—Leader or Repeater in smokeless, New Rival or Nublack in black powder. The only claim we make for them is the *service* they give you. *Of course they are waterproof.* Of course they are properly made, primed, loaded, wadded and crimped. They are *balanced* in quality, like all Winchester products.

Make your purchases from your local hardware or sporting goods store. And write to us for any particular information you wish on shotguns and shells or their use.

You Can Have Eggs All Winter-If



you give your flock a little help. It isn't a matter of chance—you'll get eggs if you work for them. And if your birds lay heavily this winter you'll take in a lot of egg-money because prices will be high. The extra eggs you can get will pay for many things you want and need.

Give your layers a chance to do their best work. Feed a good ration and include

Pratts Poultry Regulator

the original poultry tonic and conditioner. It makes hens lay because it puts and keeps them in condition to lay—healthy and vigorous. Its natural tonics, appetizers, digestives and laxatives strengthen and regulate the internal organs—make hens healthy—then they lay. Nearly fifty years of successful use by the world's leading poultrymen proves it. And our money-back guarantee is your protection. Sold in packages, pails and sacks up to 100 lbs.

Pratts Roup Remedy

is another big aid to winter layers. Put it in the drinking water occasionally, especially during spells of bad weather. It heads off dangerous colds and deadly roup, and aids in overcoming these troubles if they appear.

"Your Money Back If YOU Are Not Satisfied"
One of the 60,000 Pratt dealers is near you.
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We want you to prove for yourself that Pearl Grit will not only make your hens lay more and larger eggs, but will make your flock stronger and healthier. Send 10¢ today for pound package postpaid and give name of your dealer. Helpful booklet with Poultry Remedies in package.

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FERRIS WHITE LEGHORNS

Leading American strain for 20 years. Winners at largest fairs. Pedigreed, trapped; records 200 to 307 eggs per year. Special fair prices this month on 1,200 early cockerels, 5,000 ready-to-lay pullets and 2,000 yearling hens. We ship C. O. D. and on approval. Big free catalog gives prices and full particulars. Write today.

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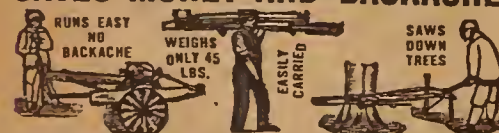
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235 Acres, \$5,500, with 3 Horses, 15 Cattle, Crops

Complete machinery, tools, wagons, 200 bushels potatoes, vegetables, ensilage, hay, fodder; dark loam fields; 25-cow spring-watered pasture; 100 acres timber; big sugar orchard, 100 apple trees; 10-room house; 100-ft. barn, running water; near R. R. village; aged owner retiring, only \$5,500, part cash, balance easy terms. Details page 8, Strout's Big Illustrated Catalog Farm Bargains, 33 States. Write for free copy.

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Foy's big book tells all about it. Contains many colored plates—an encyclopedia of poultry information, poultry houses, feeding for eggs, etc. Written by a man who knows. Sent for 5 cents. Low prices, fowls and eggs.
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Use Dandelion Butter Color Now

Add a half-teaspoonful to each gallon of winter cream and out of your churn comes butter of golden Juneshade to bring you top prices. All stores sell 35-cent bottles of Dandelion Butter Color, each sufficient to keep that rich, "Golden Shade" in your butter all the year round. Standard Butter Color for fifty years. Purely vegetable. Meets all food laws, State and National. Used by all large creameries. Will not color the buttermilk. Tasteless.

Wells & Richardson Co., Burlington, Vt.

hawk having made a meal of two. I found I had four pullets and three cockerels. I sold the cockerels and bought a male bird not related.

The second year I raised 50 pullets, sold the cockerels as broilers, and was more than pleased to see how well a flock of one color and size looked, and to hear the passers-by exclaim, "Oh, what beautiful white chickens!"

I have sale for all the broilers and fresh eggs I can raise, as people come in cars to get them. My eggs are strictly fresh, as I do not mix packed eggs with the fresh, as many do.

I have found White Plymouth Rocks to be excellent winter layers. From a pen of 60 pullets during the month of January I received 1,387 eggs, or an average of 23 eggs each, which brought \$55.66, the cost of feed being \$20, leaving a profit of \$35.66. I feed a balanced ration, for a hen is like a machine, you get what you put into it. The water dish was never left empty or frozen. One morning when the mercury registered 30 below, I gathered 54 eggs. My coop was not frost-proof, as it is single-boarded and covered with a one-ply roofing.

From a flock of 70 hens during the year 1919 I made a gain of \$3.83 per hen above feed, which was bought at market price. I was able to get five cents apiece more for my baby chicks than my neighbor who had just chickens, and the sale of setting eggs is quite an item.

MAHALA H. SALAH, Petoskey, Michigan.

All Purebreds on Our Farm

FIFTH PRIZE LETTER

ABOUT twelve years ago it was my good fortune to attend a sale of purebred milking Shorthorn cattle. The herd comprised some of the very best blood lines for milk production in the country—Lady Sale Strains, descendants of imported sires and dams. The owner was quite old, his sons had taken no interest in the herd, so after a most severe drought, a dispersion sale was held.

These cattle were so thin that local buyers were afraid to bid even good stocker prices, and pedigrees did little to aid prices under these conditions. One cow of fine size and good color but very weak because of her care was my purchase. A nearby neighbor purchased a male, the pedigrees in no wise conflicting, which proved a great convenience until my herd warranted the purchase of a bull of my own. Six weeks after date of purchase this cow gave birth to a nice heifer calf, and from this very modest beginning we have raised and sold 48 Shorthorns, which we deem very good, considering that we have had some losses. We have all calves registered before one year old, and a few weeks ago we had the herd tested for tuberculosis, and all were found free.

As to the profits of purebreds, they require no more feed than grades, neither is the care required to house them and feed them any greater. Blood tells, and with only ordinary care the herd is prettier than if they were grades. And if the care is extraordinary, the increased quality adds much greater value. The young stock can be sold at any age at a good price, as the prices of purebred cattle do not fluctuate nearly as much as market cattle. All who fed cattle in 1919-20 know what losses they faced. By judicious advertising, buyers are found for all stock we have to sell, and we have sold calves from three months to one year old at prices equal to or better than two-year-old steers of ordinary breeding command.

Purebred cattle with milking qualities bred into them for generations are more profitable for general-purpose animals than those who have no record behind them. Then, if one fails in milk production, it fills the bill admirably for butcher purposes. We have found purebred hogs and chickens to be the only profitable kinds to keep, so nothing but purebred stock is found on our farm.

WILL H. SCHISLER, Pataskala, Ohio.

Renewing the Septic Tank

SEVERAL years ago our septic tank refused to work. The soil had evidently become so saturated that it no longer absorbed the refuse water. To remedy the difficulty I built a chamber some 50 feet away from the seepage part of the tank, connecting the two with four-inch field tile. The tile were placed at a depth lower than the level of the inflow into the receiving apartment of the tank. Since then the tank has worked without a hitch. E. V. L.

THE OLD FAITHFUL FUR HOUSE OF

MASON
IN ST. LOUIS
PAYS MOST CASH FOR
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Trapping Baits That Work

By George J. Thiessen

SUCCESSFUL trappers generally find that baits are a great help. However one must understand when to use them and the kind to employ. Too many of us neglect to learn the habits of the animals and rely upon attractors to get us fur. When we fail we are pretty sure the decoy is at fault. This is wrong, usually, although some of the so-called patent scents are not all that they should be. Success with decoys depends almost wholly upon our knowledge of animal life.

For convenience, we may classify baits as natural and artificial. In the former, we have the foods.

Skunks and civet cats may be drawn with almost any kind of bloody meat. Use large chunks. Carcasses of rabbits and muskrats will do. Don't forget that flesh placed too near dwellings often lures dogs and cats instead of the animals intended. Furthermore, you will have difficulty with hawks, crows, and other birds unless you use brush or weeds to hide the meat.

Raccoons will eat almost anything. Comb honey, fish (fresh, smoked or canned) clams, and corn can be used.

The opossum can be caught with sardines. Use the kind put up in oil. Small, plucked birds are also good.

Muskrat and rabbit flesh attract mink. Tiny pieces are best though many people imagine the attractor ought be large. Fish, frogs, and the like can be depended upon at times to fool this sly animal.

The head of a rabbit is ideal for weasel. Bloody meat is also used quite extensively.

WHEN after muskrat do not forget that this animal exists entirely upon vegetables. Corn, potatoes, apples, and parsnips are good. When snow covers the ground some green decoy is best. Parsley, celery, tops of carrots, and even a twig or two of evergreen will do.

Food, the natural bait, is not always effective. On the average farm there is usually an abundance of what the fur bearers eat. Furthermore, with competition keen among pelt hunters, something better must be sought. The bait that proves good at one time or place may not at another. Therefore, we must try to find out what will serve us best at each new set.

Strange as it may seem, the raccoon exhibits great curiosity over anything bright, and the muskrat is attracted by white objects. By remembering this, we can often get pelts which otherwise might not be added to our collections.

I will treat the patent attractors very briefly. In fairness to all it must be said that most of the distributors try to put out good baits. Some of them, however, are not very effective.

Liquid scents do not, as a whole, give good results. You can prove that by pouring out a few drops, the same as you would on the line. After five or six hours the odor will have vanished. Suppose you made sets one day and expected to draw animals the next, just before dawn, when the fur bearers are most active. With the bait evaporated, or practically so, you cannot hope for any great success. Most of the failures from liquid bait may be attributed to this one fault.

There is yet another complaint, to make against it. Water destroys the scent, and snow, sleet, and frost affect it. When trapping for mink, muskrat, raccoon, and opossum many sets must be baited close to a stream, or lake. Should the water rise the liquid scent will be destroyed.

THE various paste baits have overcome the faults of the liquids. This decoy is very lasting. If we are compelled to keep away from traps for days—and this is often the case, especially with mink—we know that the paste can be depended upon to lure for a week. Should there be rain, snow, sleet or frost, we may rest assured that his new type of attractor can be submerged, and when exposed to air again it is apparently as strong as when squeezed from the tube.

There are two things about baits to bear constantly in mind. The most important, perhaps, is that no decoy ought be employed where sets can be made without it. Remember, there are no magic mixtures which actually drag animals into traps.

Note: This is the first of an interesting and instructive series on trapping by Mr. Thiessen. Others will appear every month while the trapping season is on. If you want to ask questions, Mr. Thiessen will gladly answer them. Enclose stamped envelope and make your questions brief and to the point.

THE EDITOR.



Off Summer Pastures

Your animals are coming off summer pastures and going on dry feed. It's a big change. Out in the succulent pastures, Nature supplies the tonics and laxatives to keep animals in condition.

—But unless you supply these tonics and laxatives to your stock on dry feed, you are not going to get full returns from your hay, grain and fodder. Besides your animals are apt to get "off feed" and out of fix.

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Supplies the Tonics—Laxatives—Diuretics

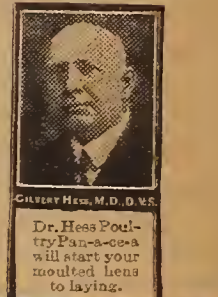
- It keeps animals free from worms.
- It keeps their bowels open and regular.
- It keeps the appetite and digestion good.
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- It helps to keep up the milk flow.
- It keeps feeding cattle right up on their appetite.
- It keeps hogs healthy, thrifty, free from worms.
- It means health and thrift for all animals.

Always buy Dr. Hess Stock Tonic according to the size of your herd. Tell your dealer how many animals you have. He has a package to suit. Good results guaranteed.

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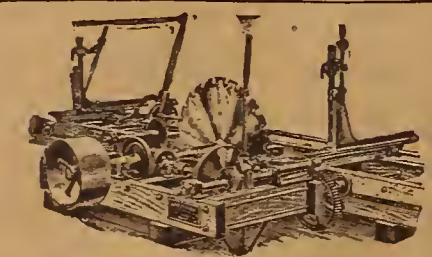
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Send the Men's Work Shoes No. AX1817. I will pay \$3.69 for shoes on arrival and examine them carefully. If not satisfied, will send them back and you will refund my money.

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Send for free booklet

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134 Main St., Hackettstown, N. J.
1394 Hudson Terminal Bldg., New York City

My Home Medicine Chest

CUTS, sores, scratches on horses, and other minor ailments, I find, may properly be cared for by the farmer. Then it is possible in some cases to relieve pain by simple treatments while waiting for the veterinarian's arrival. This, of course, presupposes a thorough knowledge of the case in question, because a wrong step may be fatal.

With this work I found a medicine chest very handy and valuable. There were a great many things which seemed to be necessary, but I finally reduced the stock of medicines to a few staple supplies. These I kept in a clean place where they might be found in a hurry when needed. I built a cabinet in the dairy barn where the milkers changed their clothes. It was a place convenient to the horse stables and piggery. In it I put the following articles: Douche pump, drench bottles, teat knife, milking tubes, two thermometers, a package of umbilical cord tape, bandages, and a milk-fever outfit. On the upper shelf I put medicines which are commonly needed. These included: Iodine, carbolic acid, lysol, castor oil, boric acid, Epsom salts, Glauber salts, saltpeter, borax, sulphur, pine tar, castile soap, a good liniment, and ointments.

I took a great deal of pride in my medicine chest, and after I had learned that it was a good investment I bought some standard bottles from the druggist. Of course, I had to see that the supplies were replenished from time to time as they were used up.

While my medicine chest was new and novel, I had lots of trouble. The men found it an excuse for not caring for the animals they were intrusted with. Instead of using precautions to prevent collar sores by keeping the collars clean, they depended on my "cure-all," which they used very freely and extravagantly. Some of them had ills of their own, and used my medicines profusely; and some were inclined to overdose, whether it was themselves or one of the animals.

I had looked for opposition on the part of my regular veterinarians, but to my surprise they welcomed the innovation, and found many occasions to use it. Once the "vet" and I were attending a mare who was having some trouble foaling, and I feared laminitis. When the colt was born and everything seemed all right, he said if he only had his kit along it would be all right.

He had been called in early morning, and had come without it. He wanted some umbilical cord tape and some iodine to disinfect the colt's navel. I told him that I thought I could fix him up, and led him to the chest. It interested him very much, and he exclaimed:

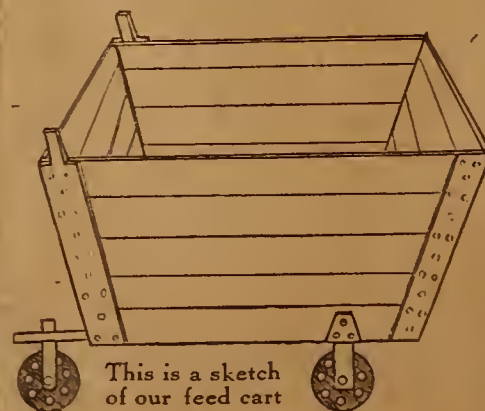
"How long have you had this? It's just the thing. Every farmer should have one."

J. H. V.

Saving Time in Feeding

WE HAD one large feed cart that we used for ensilage, and it was such a great labor saver that we wanted another smaller cart for feeding grain. We found some old discarded barn-door hangers that had been used to run on a wooden track. We made a small truck bottom four feet long and two and one-half feet wide. On this we built a bed with straight sides and sloping ends. At one end we let the vertical strips to which the side boards were nailed stick up six inches above the sides, and dressed them down to make the handles. Under the front of the car, on each side, we bolted one of the door hangers. Under the end having the handles we fastened a small swivel wheel taken from a discarded weeder. The addition of the swivel wheel made the cart easy to handle in turning corners. The diagram shows how the cart was made.

M. C. M., North Carolina.



This is a sketch of our feed cart

Feed Every 3rd HOG FREE

Prove at our risk that you can easily save one-third on high priced feed by using **MILKOLINE** which is **Good Buttermilk Made Better for Feeding Hogs and Poultry** **Sold on 30 Days Free Trial**

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Pleasant Hill, Ohio
6911 Main Street

Are You Prepared to Fight a Fire?

A LITTLE group stood in front of the post office, discussing the fire at the George Halsey farm. "Didn't George have any insurance?" someone inquired. "No," was the reply. "He said the rate was too high, so he never took out any. The fire began in a rubbish heap near the barn. There wasn't any water handy; the spring that supplied the barn had run dry. "He told me," continued the speaker, "that there was only a small blaze when first discovered; that if there had been a fire extinguisher handy they easily could have put out the flames, but they had to run to the house for one and by the time they got back it was too late. A brisk wind was blowing; the house caught fire and everything went." Every year the fire losses in this country total the enormous sum of about \$250,000,000. This is the actual loss, without considering the sacrifice of life and the many millions of dollars necessary to maintain fire departments and fire appliances. Yet experts tell us that by the timely use of chemical fire extinguishers the loss at many of these fires could be kept down to a few hundred dollars. Chemical fire extinguishers are especially valuable on farms where the water supply runs low at certain seasons of the year, or where a fire department is too far away to be depended upon.

BEFORE describing the various types of chemical fire extinguishers, it may interest you to know that certain fire appliances have the approval of the National Board of Fire Underwriters. Such appliances, including fire extinguishers, bear a label showing that they have been approved by the Underwriters' Laboratories. The Board of Fire Underwriters is an organization of practically all the insurance companies of the country, which coöperates with fire chiefs and fire-prevention and fire-fighting organizations to reduce fire losses. For the purpose of testing appliances, a laboratory is maintained in Chicago. Under some circumstances, as in industrial establishments, a reduced fire-insurance rate is allowed where there is specified equipment of approved fire extinguishers. But even where such allowance is not made the approved extinguishers bearing the label of the Underwriters' Laboratories is preferable as being of standard efficiency.

The type of chemical fire extinguisher most commonly used is the acid-bicarbonate type. This consists of a copper container holding a solution of bicarbonate soda, with a separate glass bottle containing sulphuric acid. When the two chemicals are mixed, carbonic-acid gas is produced and a stream of water charged with this gas is thrown on the flames. Carbonic-acid gas is the gas found in soda water. Fire cannot burn in it. The acid-and-soda solution in these extinguishers are usually mixed by inverting the apparatus, although in some makes you must use a lever or handle to break the acid bottle. Another kind of carbonic-acid extinguisher throws a foam. This is especially good for burning oil, gasoline, etc.

ONE objection to soda-acid extinguishers is that in winter the liquids may freeze. The soda solution freezes at about 20 to 25 degrees, Fahrenheit, above zero, the acid ordinarily at about 29 degrees above zero, but after it has stood for a while the acid absorbs moisture from the air, causing its freezing point to rise, sometimes above that of water. A way to prevent this is to put the extinguisher in an air-tight box in which an electric light is kept burning. Extinguishers of this type should be discharged, cleaned, and recharged once each year. The popular small hand extinguisher containing carbon tetrachloride or something similar is highly effective against gasoline or oil fires, hence it is much used in automobiles and garages. A fifteen-percent reduction on the fire-insurance premium for automobiles is usually allowed, when the car is new, if equipped with an extinguisher of this kind. Fire extinguishers, like other fire appliances, should be inspected regularly; their chief value lying in their being always ready to guard your house or buildings against the demon fire. GILBERT I. STODOLA.

EMERSON once said that the most valuable product on any farm is not crops but character. He added that men take out of the earth much more than they put back. I wonder how many of us are getting maximum yields of this priceless farm by-product.

Confidence

More than 13,000 women and 22,000 men make up the list of the owners of Swift & Company.

Every state in the Union is represented.

Of this great enrollment more than 10,000 are employees of Swift & Company who own shares in the business.

An additional 13,000 employees are buying shares on deferred payments.

These men and women have confidence in the company's policies, its integrity and purposes. That is why they invest their savings in shares.

Swift & Company has been paying dividends regularly for 34 years. The present rate is 8 per cent.

Swift & Company shares are bought and sold on the Chicago and Boston stock exchanges.

The Company itself has no shares for sale.

The shares represent actual, tangible values. There is no water.

Anybody—livestock man, retailer, or consumer—may buy them and thus become a part owner of Swift & Company.

No one man, no one family, owns as much as half the stock.

This advertisement is for the purpose of acquainting you with the fact that Swift & Company is not a "close corporation," and that anyone may participate in the profits—and share the risks and responsibilities—by becoming a shareholder.

Swift & Company, U. S. A.

Founded 1868

A nation-wide organization owned by more than 35,000 shareholders



DO DITCHING THIS FALL
Prevent winter rains smothering the soil. Put land in shape for early spring work. Get your ditching and terracing done now with **The Martin Farm Ditcher** and Grader. Works in any soil. Makes "V"-shaped ditch or cleans ditches down 4 ft. deep. All steel. Reversible. Adjustable. Write for Free Book. **OWENSBORO DITCHER & GRADER CO., Inc.** Box 311, Owensboro, Ky.
10 Days Free Trial

YOU CAN'T CUT OUT A BOG SPAVIN, PUFF OR THOROUGH-PIN, BUT
ABSORBINE
TRADE MARK REG. U. S. PAT. OFF.
will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. \$2.50 per bottle, delivered. Will tell you more if you write. Book 4 R Free.
W. F. YOUNG, P. D. F., 23 Temple St., SPRINGFIELD, MASS.

GET Your Cream NOW!
ONLY \$2 Down A Year to Pay
on This Easy, Self-Earning Plan!
You won't feel the cost at all. The machine itself will save its own cost and more before you pay. We ship any size separator you need direct from our factory and give you a whole year to pay our low price of \$38 and up. Read what Alfred Geatches, North Jackson, O., says: "We are getting more than twice the cream we were before. The separator is very easy to clean and runs very easy." Why not get a fully guaranteed New Butterfly Separator for your farm and let it earn its cost by what it saves?
EASY TO CLEAN
Cream Separators have these exclusive, high-grade features: Frictionless pivot ball bearings bathed in oil—self-draining bowl—self-draining milk tank—easy-cleaning one-piece aluminum skimming device—closed drip-proof bottom—light-running cut steel gears, oil bathed. Guaranteed highest skimming efficiency and durability. We give
30 Days' FREE Trial—Lifetime Guarantee
against all defects in material and workmanship. We ship you the size machine you need and let you use it for 30 days. Then, if pleased, you can make the rest of the small monthly payments out of the extra profits the separator saves and makes for you. If not pleased, just ship the machine back at our expense and we will refund what you paid. You take no risk. Write for FREE Catalog Folder now.
ALBAUGH-DOVER CO., 2189 Marshall Boulevard, CHICAGO
More than 175,000 New Butterfly Separators now in use.

Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

IN THE July issue of FARM AND FIRESIDE W. O. Kunkle of Carthage, Illinois, told his interesting story about alfalfa. Kunkle has four hobbies and should you ever receive one of his neat business cards you will find in the lower left-hand corner these words:

MY HOBBIES
PER ACRE
100 Bushels of Corn
18 to 20 Tons of Silage
5 to 6 Tons of Alfalfa
4 to 5 Tons of Clover

Just last week we were talking to a man from Kunkle's neighborhood who told us that Kunkle not only rode these hobbies hard, but also that he made them realities. All of which, coming from a disinterested party, speaks mighty well for Mr. Kunkle. The following extract from a letter, together with the photograph, were received recently from Mr. Kunkle:

"I am enclosing snap representing the four cuttings of one season's production on my Illinois farm, where they told me 'Alfalfa cannot be raised.' However, I do not harvest the fourth crop, but leave it stand as protection against severe winter weather."

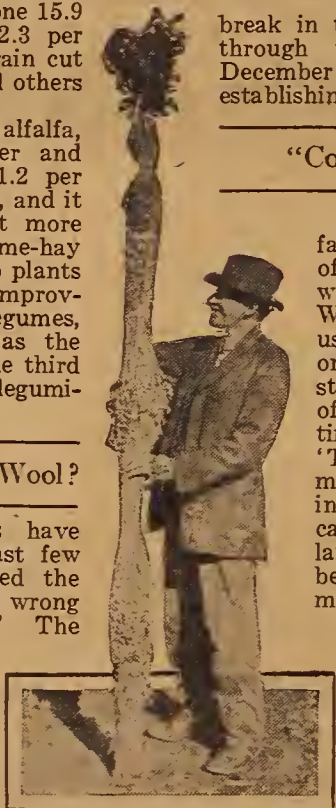
In this connection it is interesting to learn that alfalfa now has an acreage greater than that of any other legume or grass cut for hay, not growing in combination with another. Of the total tame hay acreage in 1919, alfalfa occupied 21.1 per cent, timothy and clover mixed 18.2 per cent, timothy alone 15.9 per cent, clover alone 12.3 per cent, pea 8.7 per cent, grain cut green 7.7 per cent, and all others 16.1 per cent.

The leguminous plants, alfalfa, clover, one-half of clover and timothy, and pea are 51.2 per cent of the tame-hay area, and it is a significant fact that more than one half of the tame-hay acreage is now devoted to plants of the nutritive and soil-improving properties of the legumes, whereas 10 years ago, as the census testifies, hardly one third of the tame-hay area was leguminous.

What's Wrong With Wool?

A number of letters have reached my desk the past few months which have asked the same question: "What's wrong with the wool market?" The real facts in the case are that, while the usual wool holdings prior to 1919 amounted to about one-half year's supply, the present holdings equal a whole year's supply. However, nearly all of this surplus is of the coarser grades and apparently there is no surplus of the finer grades of wool such as is used in this country. The accumulation of coarse wool stocks seems to be a direct result of the inability of Germany and Austria to buy and consume their quotas. These markets have been closed for some time and coupled with the military demand dropping in other countries, coarse wool has piled up in all parts of the world. This in turn has depressed the fine-wool market.

Fortunately there is a remedy in sight. When Congress convenes next month the American Farm Bureau Federation will urge immediate passage of a bill establishing credit with Germany and her former associated countries, equal in amount to the net proceeds of the sale of alien property in the United States during the war. These proceeds amounted to nearly a billion and a half dollars and the remainder, after claims and expenses are allowed, will be close to one billion. Sooner or later this money must be returned to Germany and her former allies for use in purchasing the raw materials they need. Had this legislation been put through last spring it probably would have prevented the serious



W. O. Kunkle of Carthage, Illinois, with four cuttings from this year's crop of alfalfa. Neighbors told Kunkle that alfalfa could not be raised on his farm

break in the wool market. If it is put through when Congress assembles in December it will aid materially in re-establishing proper values for wool.

"Cow Money" Isn't New

"Do you know that the bovine family has been used as a symbol of exchange for many centuries?" writes W. R. L. of Green Lake, Wisconsin. And not waiting for us to admit our ignorance he goes on: "Well, the first coin ever struck off by Rome had the figure of an ox on it. The cow in ancient times was the symbol of fortune. 'This family is mine and these are my cows,' said the Arab dweller in tents, and this has been the cause of the use of the root of languages which stands for 'cow' being used in many terms that mean money."

"For instance, the Latin root *pecus* forms many such words. Pecuniary reward first meant a payment in cows; peculiarity originally referred to the number of cows a man had. The old Teutonic root for the word cow furnished the words 'scot' and 'scot-free'; a man who paid his bill or 'scot' did so in a certain percentage of the value of a cow, and if he got into trouble but escaped without being mulcted in money, he was said to have managed it without losing one of his cows."

Anyone who has ever gone through the fine dairy regions of Wisconsin can easily understand why W. R. L. knows that cows stand for money—and we'll bet that he didn't have to read ancient history to find it out, either.

Coöperative Information Wanted

Tom Delohery's article on coöperative marketing in August brought a number of interesting letters, not the least of them being one from Mr. O. Geerkens, manager of the Farmers' Co-operative Store of Cooksville, Illinois.

"Through one of our members," writes Mr. Geerkens, "I received the August copy of your paper, because it contained the article about twenty-one points to watch in organizing a coöperative association."

"November 1, 1919, I organized a co-operative store, or rather converted the

store I owned. So far we have been successful, but your article interested me, and still greater things can be done and perhaps some good pointers can be gotten from other like organizations."

"We are organized under the common law, which allows us to limit the voting power to one vote, regardless of how many shares a man owns, whereas, if we were organized under the state law, we would have to allow a man a vote for every share. 'I would indeed like to hear from other similar organizations as to their success.'"

"It is our aim to interest more people in this movement and start other similar stores within a radius of from fifteen to twenty miles. While each store will be owned and controlled by its own members, the managers will pool the buying as much as possible and maintain a truck that will carry on an interchange between the different stores, which would save the carrying of a large stock at each place but



Master Earl Foster of McConnelsville, Ohio, with his pet Jersey calf

would enable the different stores to help each other out with merchandise.

"While our plan is still in its infancy, we can truthfully state that we are making elegant headway. We have now arranged one social meeting every month where the members not only take part in the business meeting, but enjoy the evening in a social way."

"I welcome correspondence regarding the coöperative movement and will be glad to enter into more particular points regarding same."

Well, Mr. Geerkens, we think you are on the right trail. You believe in co-operation and, moreover, you are open to the conviction that even though yours is a going concern you can still learn. That is a mighty healthful sign for either an

individual or an association. There will be another article on coöperation in the December issue, by a Californian.

There is no doubt in the world that the livestock industry throughout the country is up against a financial crisis and unless some help is given the producers of cattle, hogs and sheep, production will be seriously curtailed and the price of feed crops will then come on the market are likely to suffer a serious decline. It is no secret that the commission men in all the large livestock marketing centers are extremely anxious to get money for the livestock paper which they hold.

In this connection, Mr. Bruce Stafford, President of the Chicago Livestock Exchange, said:

"Our banks where we have been getting our money are up against it. We go to them and ask the interest rate and they tell us seven per cent, but when we ask for the money we are told they have none. The trouble is that the big industrial concerns that are willing to pay eight and nine per cent are getting it."

"Now this shortage of money has retarded seriously in the movement of feeder cattle back to the country. At the seven large markets in the Middle West for the past seven months this movement is twenty-five per cent less than a year ago, which means that the feed lots of the Corn Belt now hold 350,000 less cattle than they did a year ago."

"If this situation continues, beefsteaks will be beyond the reach of the average man in another year. I have been told that the producers of range cattle in the West and Northwest are up against it for money, too. It is the custom for Texas raisers to ship thousands of cattle to the Northern pastures every year, but this year the tightness of money has greatly curtailed this movement. Then, too, the Northwestern ranchers usually spend about \$25,000,000 annually for thin cattle, but the amount spent this season is negligible. But it does not end there, for the Corn Belt feeder depends in a large measure upon the movements of these cattle for his feeders."

The seriousness of this situation was considered recently in Chicago in a conference of farmers, bankers, packers, railroad and commission men. There were also three Federal Reserve District governors present. These governors reported that they could offer no aid due to the fact that many member banks in the producing sections were not calling upon them for the lines of credit to which they are entitled.

A committee was appointed to go to Washington to confer with the Federal Reserve Bank and to ask the Treasury Department to help by placing its funds on deposit with the Federal Reserve Banks in the districts where the producers need money. Every reader of FARM AND FIRESIDE

is probably affected directly or indirectly through the probable effect this situation may have on livestock and feed-crop prices. You can make your influence felt by writing to the Advisory Board of the Federal Reserve Bank, Washington, D. C., asking its members to do what they can to ease this financial crisis.

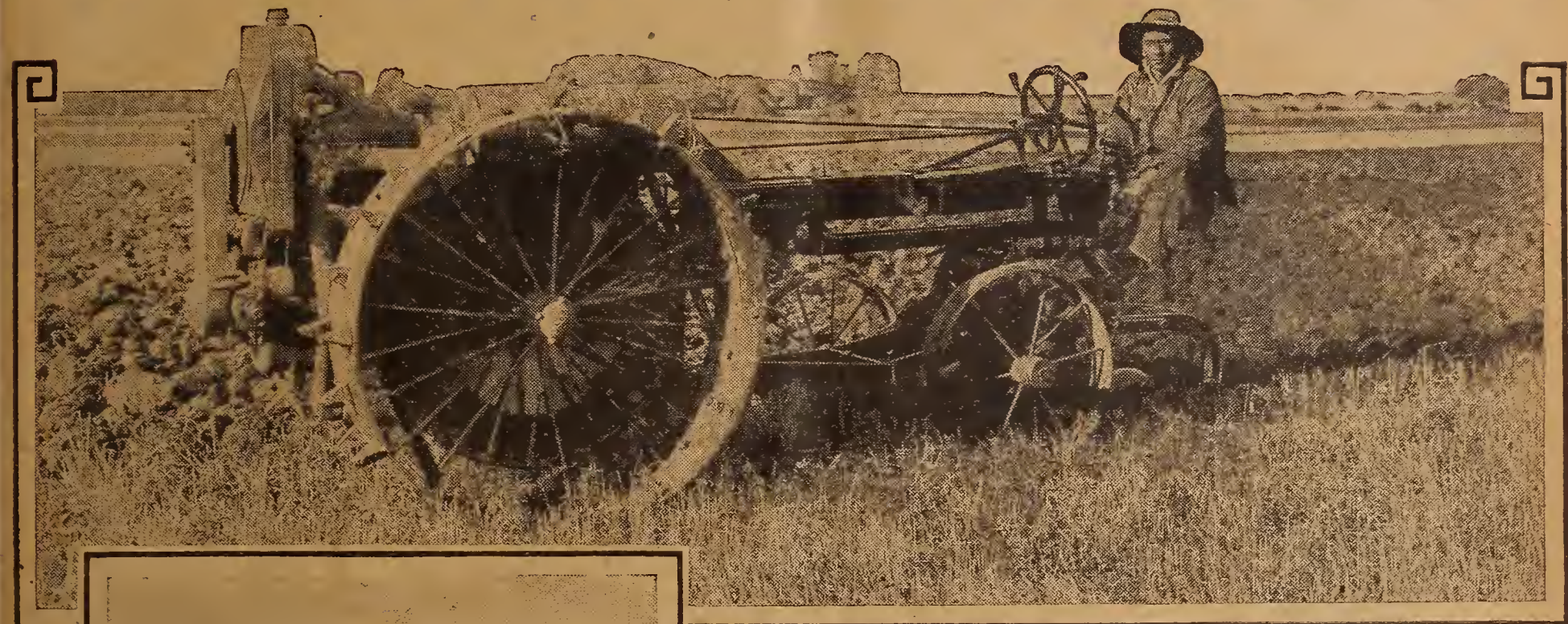
I would be very much interested in hearing from the younger readers of FARM AND FIRESIDE as to whether they like the Daniel Lewis articles on the history of the breeds. Do they tell you what you want to know?

George Martin

MOLINE

The Universal Farm Power Plant

WINS AGAIN



The Moline is unique in the tractor field—made so by our patent protection.

LAST year Ben Davis, five times champion with horse-drawn plows, won the Wheatland Plowing Match in owners' class with a Moline Tractor. Again this year, the same team wins!

Ben Davis won sitting on the seat of his plow, where he could watch the work and make instant adjustments to meet varying soil conditions.

Mr. Davis is a great plowman, and the Moline a great farm unit. They made an unbeatable combination.

The Moline is now offered as a 3-2 Plow outfit.

3 Plows for ordinary conditions which prevail in most sections of the country.

2 Plows for extreme conditions and unfavorable seasons.

It is the correct farm power plant, doing all belt and field work, including cultivation, with one man.

If desired you can use the "drag behind" or horse drawn implements you now have with the Moline Tractor the same as with other types of tractors.

See Your Moline Dealer or Write Our Nearest Branch at:

Moline
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MOLINE PLOW COMPANY, MOLINE, ILLINOIS

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Let Us Send You a SILVERTONE Phonograph for Two Weeks' Trial in Your Home Without Expense to You

WE WANT you to try one of these beautiful SILVERTONE Phonographs in your home for two weeks without a cent of expense and without obligating you to buy if you are not fully satisfied with the instrument.

Select any SILVERTONE Phonograph shown on this page, fill in the order blank and mail it to Sears, Roebuck and Co. today. We ship SILVERTONE Phonographs on two weeks' trial. You take absolutely no risk, nor do you obligate yourself in any way by taking a SILVERTONE on trial. All we ask you to do is to give the phonograph a thorough test. Examine its mechanical features, cabinet work, workmanship and finish. Try it with any disc record you desire, and note its beauty of tone and fidelity of reproduction. Give it every test necessary to prove the truth of our claims for it. And then compare the price of the SILVERTONE with that of any other phonograph of the same size, beauty and musical excellence.

If, at the end of the two weeks' trial, you are not fully satisfied with the SILVERTONE, if you do not believe that it is in every way worth from 25% to 50% more than we are asking for it, simply notify us and we will take away the phonograph at our own expense and will refund any transportation and cartage charges you have paid. The two weeks' test will not have cost you one cent, nor placed you under any obligation.

Play as You Pay—Very Easy Terms

If, after two weeks' trial, you are fully satisfied with the SILVERTONE and desire to keep it, simply send us the first monthly payment and then the same amount each month until the total is paid. The amount of the monthly payment on each instrument is shown under the illustrations.

Compare our terms with those offered on any other phonograph of the same high quality. The small monthly payment required on even the highest priced models makes it easy for you to own a really fine instrument without incurring a heavy financial burden.

This Liberal Selling Plan is the Best Guarantee of SILVERTONE Quality

We know that the SILVERTONE Phonograph is right in every respect—mechanically, musically and in design and finish. That is why we can offer them on this liberal no money down trial basis. We know that when you get a SILVERTONE Phonograph in your home for two weeks' trial you will be convinced of its high quality and will agree with us that it is the best phonograph on the market at anywhere near the same price. We have sold over 330,000 SILVERTONE Phonographs, and the unanimous praise of their owners is the most convincing proof of SILVERTONE quality.

Plays All Disc Records

The SILVERTONE convertible tone arm is so constructed that it permits the playing of any make of disc record, either vertical or lateral cut. It is almost as easy to adjust the reproducer for different types of records as it is to change needles.



MODEL J
LOUIS XV PERIOD
\$6.00 Price
A Month **\$165.00**
Mahogany, Walnut or Fumed Oak
Gold Plated Metal Parts

Specifications

Height, 46 1/4 inches; width, 21 inches; depth, 21 1/4 inches. Net weight, ready to play, about 85 pounds.



MODEL G
ADAM PERIOD
\$4.50 Price
A Month **\$115.00**
Mahogany, Walnut, Golden Oak or Fumed Oak

Specifications

Height, 43 1/4 inches; width, 19 3/8 inches; depth, 22 inches. Net weight, ready to play, about 75 pounds.



Model K
SPECIAL
\$4.00 Price
A Month **\$79.00**
Quarter Sawn Fumed Oak

Specifications

Height, 42 1/4 inches; width, 18 1/4 inches; depth, 21 3/4 inches. Net weight, ready to play, about 66 pounds.



MODEL H
LOUIS XVI PERIOD
\$5.00 Price
A Month **\$135.00**
Mahogany or Walnut

Specifications

Height, 45 3/4 inches; width, 20 inches; depth, 22 inches. Net weight, ready to play, about 75 pounds.



MODEL C
\$3.00 Price
A Month **\$55.00**
Mahogany or Golden Oak

Specifications

Height, 14 inches; width, 17 inches; depth, 20 1/2 inches. Net weight, ready to play, 40 pounds.

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Date _____ 192__

You may ship me the SILVERTONE Phonograph which I have marked with an (X), without any obligation on my part to buy unless I am perfectly satisfied.

If, after two weeks' trial, I decide to keep and use the instrument, I will send you the first payment for the phonograph and pay the same amount each month until paid in full; then the SILVERTONE becomes my property.

Should I decide, after two weeks' trial, that the SILVERTONE is not satisfactory, I will notify you, and you are to give me instructions so that I may send it back at your expense. You are also to return to me any transportation and cartage charges I have paid.

I have always been faithful in paying my obligations and am making this statement for the purpose of inducing you to grant me these terms, and I give you my pledge that you may feel safe in trusting me to pay as agreed.

Sign Here _____ R. F. D. _____ Box _____ Street _____
No. _____ and No. _____
(Sign your name here plainly and carefully. If under age, some member of your family who is of age and responsible should sign this order with you.)

Postoffice _____ County _____ State _____

Shipping Point _____ County _____ State _____

I have been located in this town since _____ If less than 5 years, give former address _____

My business, occupation or profession is _____ Do you wish shipment made by express or freight? _____

REFERENCES—(Please give names of TWO references.)

Name	Address	Business or Occupation

We ship Silvertone Phonographs to all parts of the U. S. We do not accept orders from foreign countries.

Model C.

☐ Mahogany.
☐ Golden Oak.
Price, **\$55.00**
Payment, **\$3.00** a month.

Model G.

☐ Mahogany.
☐ Walnut.
☐ Golden Oak.
☐ Fumed Oak.
Price, **\$115.00**
Payment, **\$4.50** a month.

Model H.

☐ Mahogany.
☐ Walnut.
Price, **\$135.00**
Payment, **\$5.00** a month.

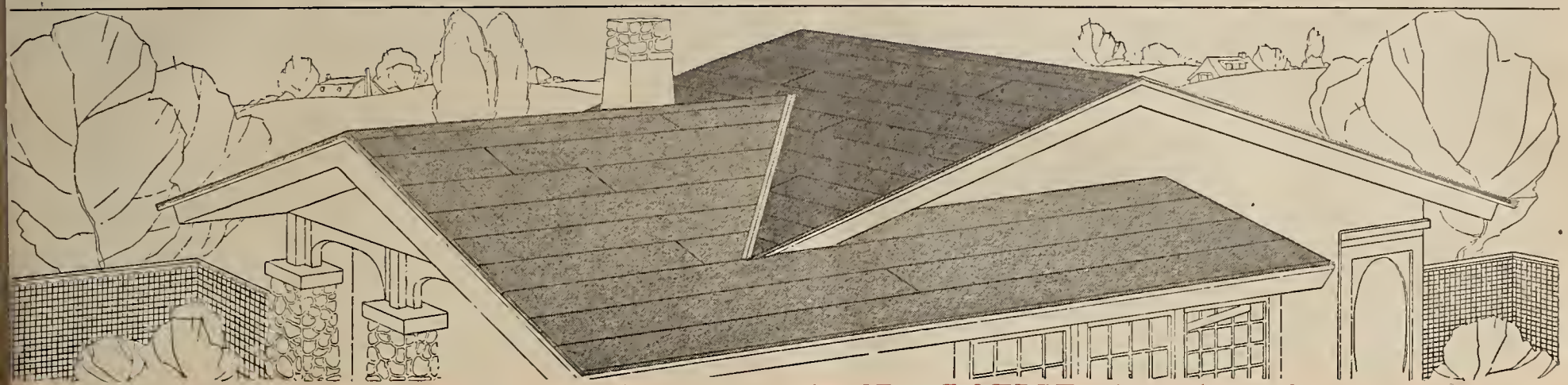
Model J.

☐ Mahogany.
☐ Walnut.
☐ Fumed Oak.
Price, **\$165.00**
Payment, **\$6.00** a month.

Model K.

☐ Fumed Oak.
Price, **\$79.00**
Payment, **\$4.00** a month.

The area of roofs yearly covered with Certain-teed is greater than that covered by any other kind of prepared roofing. Certain-teed comes in rolls—both in the staple gray kind and the slate-surfaced green or red, and also in green or red slate-surfaced shingles for residences. Light, medium and heavy Certain-teed Roofings are guaranteed for five, ten or fifteen years respectively. The slate-surfaced Certain-teed is guaranteed for ten years.



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Making Bungalows Less Expensive

THE use of Certain-teed roofing makes possible a gratifying reduction in the roofing costs of bungalows.

Certain-teed is less expensive to buy and less expensive to lay than ordinary forms of roofing.

Yet it is so durable that it often outlasts even its fifteen-year guarantee by a gratifying number of years.

The smooth gray kind is most commonly used, but many builders of bungalows prefer the slate-surfaced green or red.

All three kinds, as well as Certain-teed shingles, are sold by dealers everywhere.

Certain-teed Products Corporation
General Offices, Saint Louis
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Certain-teed



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TRADE
MARK

Look for the Arctic with the Red Ball

You can be sure of having warm feet and warm ankles when you wear "Ball-Band" Arctics.

Dry shoes, too—and it's expensive to let shoe-leather be soaked and ruined, nowadays.

"Ball-Band" Rubber Boots are comfortable, and they fit the way you like a boot to fit.

You'll find any height and

style in "Ball-Band" Light-Weight Rubbers.

All "Ball-Band" Rubber Footwear gives you More Days Wear, at lowest cost per day's wear. That's one reason why sixty thousand stores sell "Ball-Band."

Ask your dealer for our free illustrated booklet, "More Days Wear."

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Mishawaka, Ind.

"The House That Pays Millions for Quality"



FARM & FIRESIDE

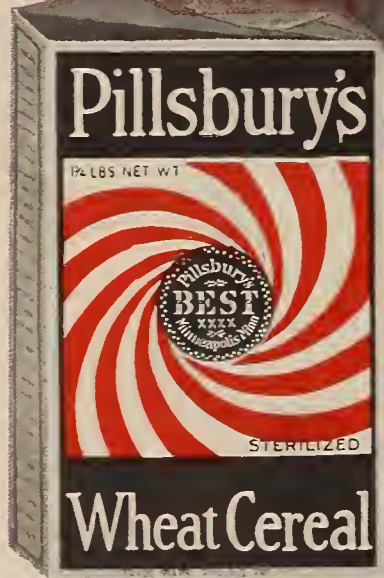
The National Farm Magazine

DECEMBER 1920

5¢ A COPY



Sapiro on Coöperation—^{See}page 5



A Man's Food- An Infant's Food-

creamy-white granulated hearts of wheat—so easily digested that it forms the first and best food for infants, yet so nourishing and substantial that it sustains the hardest worker—such is Pillsbury's Wheat Cereal.

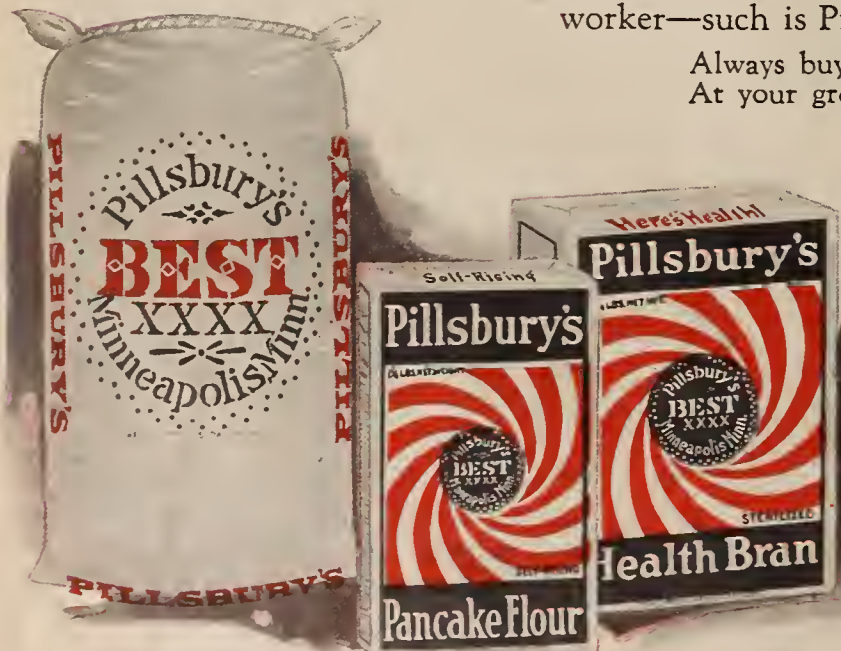
Made by the millers of Pillsbury's Best Flour and under the same supervision—you can naturally depend on the constant, uniform high quality of this wholesome breakfast cereal.

Always buy Pillsbury's Family of Foods—different in kind, but alike in quality.
At your grocer's.

Pillsbury's Best Flour
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Rye, Graham and Macaroni Flours

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Minneapolis, U. S. A.



Pillsbury's

FAMILY OF FOODS

Wheat Cereal

"Why I Like My Ottawa"



MR. AND MRS. W. P. ADAMS of Seward, Okla.

Read This Letter!

Adams Alfalfa Farms
ALFALFA HAY
ALFALFA SEED
Seward, Okla.
Jan. 27, 1920.
WHY I LIKE MY OTTAWA LOG SAW
My Ottawa is a contented worker; it does not grumble because the weather is too cold or too hot. It does not complain when called on to work over-time. Even the sound of the dinner bell will not cause it to stop! My Ottawa outfit enables me, a man seventy-two years old, to saw more wood than six able-bodied men can cut with a common saw in the same length of time, and I can do it easier. Independence is the greatest thing in the world, and my Ottawa makes me absolutely independent as far as fuel is concerned. If the coal miners would rather strike than dig coal, it's all right with me—I can take my Ottawa down among those oak trees along the creek and in eight hours I can work up enough wood to run four stoves for a month, so why should I worry about little things such as strikes and car-shortages? Operating an Ottawa is as simple as winding a watch; they are made to run, and they do. Use an Ottawa Log Saw one day and you'll never be satisfied to go back to the old crosscut. If there is timber on your farm, or if you can buy trees from a neighbor, you cannot afford to try to get along without an Ottawa.

Sincerely,
W. P. Adams

Beat the Coal Shortage

With the OTTAWA Log Saw. Have plenty of fuel for yourself and to sell at high prices. The OTTAWA cuts your winter's supply quick and then goes on making money for you cutting wood for neighbors and to sell in nearby towns. This wonderful machine can be had at small cost. Cuts down trees, saws up logs and buzzes up branches and poles. Does the work of 10 to 15 able-bodied men.

Read Mr. Adams' letter opposite.

Remember! Mr. Adams of Seward, Okla., whose letter is printed above, is 72 years of age, yet he saws more wood with his OTTAWA Log Saw than six able-bodied men can cut the old way. Astounding—but it's true—his own letter proves it! And that isn't all—his OTTAWA makes him independent of all fuel problems, a blessing indeed with the country facing a coal shortage. Let the OTTAWA make you independent, too.

OTTAWA LOG SAW

Cuts Down Trees—Saws Logs By Power

Pulls Over 4 H-P. New Improved 1921 Model cuts much faster than other Drag or Log Saws as they are built today. Makes 310 saw cuts a minute. Engine pulls over 4 H-P. Weighs less than any 3 H-P. Drag Saw built. Balanced Crank Shaft eliminates vibration; increases power and saves fuel. Direct gear drives saw; no chains to tighten; no keys; no set screws. 4-cycle Frost Proof Engine. Built-in Magneto and Automatic Governor with Speed Regulator. Outfit strong but simply built. A great work-saver and money-maker. When not sawing, engine runs pumps, feed grinder, separator, etc. Lots of reserve power.

Special Friction Clutch

lever controlled, enables you to start and stop saw blade without stopping engine. Saves time and provides absolute safety in moving saw from log to log and from cut to cut along the log. No dangerous swishing of the saw blade in the air.

30 Days' Trial

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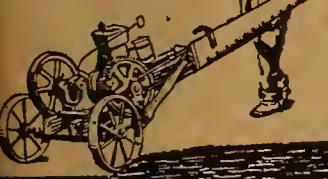
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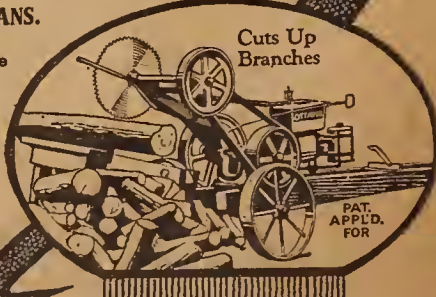
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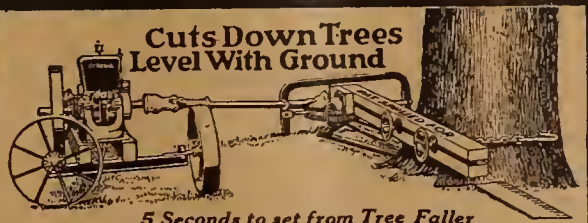


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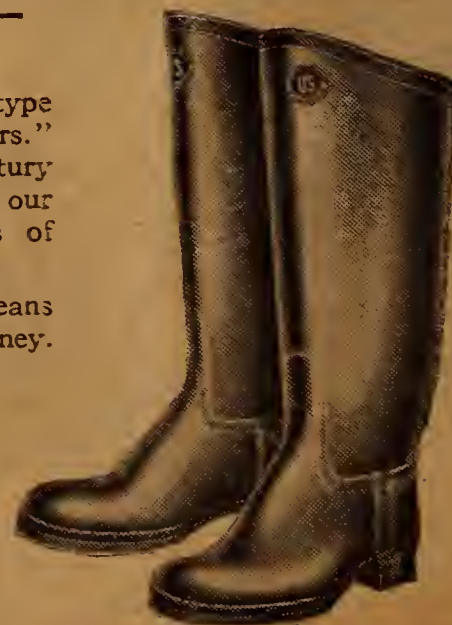
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Coöperation As I See It

By Aaron Sapiro

THERE have been so many varieties of farmers' coöperative marketing in the United States that it is hard to recognize real coöperative marketing when you see it. Coöperative marketing is not a patent cure-all for the ills and complaints of farm life.

True coöperative marketing solves only one part of the farm problem. It establishes a sane system for *selling farm products*. It has nothing to do, directly, with production.

In California there are state-wide coöperative marketing associations handling approximately three hundred million dollars of farm products a year.

These associations cover all kinds of perishable products, such as fresh fruits, semi-perishable products, such as eggs and potatoes; relatively non-perishable products, such as dried fruits; non-perishable products, such as nuts, beans, baled alfalfa, etc.

California has been a real laboratory for experiment and experience in all kinds of farmers' coöperative problems—packing, processing, standardizing, storing, marketing, and financing all kinds of crops.

For twenty-five years California has been trying to find the best legal forms, the best methods of organization, the best plans of finance, the best marketing methods. Above all things, the Western experience proves that the term "coöperative marketing" covers a multitude of successful experiences and methods of selling farm products.

ONE method serves brilliantly for perishable products, by instituting *local* packing houses and a decentralized system. With such products, routing is the chief problem, so that the various consuming markets shall avoid periodical gluts and famines.

In perishable fruits, there is a tremendous variation in packing and grading. Therefore local packing houses are justified.

For non-perishable products a totally different system has been evolved. Here a highly centralized method has proved most successful. All growers deliver the specific product under a standard contract to *one* association. The central association takes title to the dried prunes, grades them, pools them, and markets them all from *one* main office.

With non-perishables the primary problem is financing and distributing, so that

the market will have a sufficiency at all months in the year.

Again there are differences between the marketing problems of farm products that can be produced all through the year and products that are harvested once a year. It is all the difference between eggs and wheat.

For every commodity there is a best method of marketing and a best form of coöperative association.

One of the most common blunders in this study is the application of the Rochdale consumers' coöperation system, without material change, to the producers' problems of America. The Rochdale system is a marvelous method for minimizing speculation and waste from a *consumer's* standpoint. From a *producer's* standpoint it is exactly the wrong kind of association.

A WONDERFUL amount of splendid energy and labor has been used in the Middle West to build up local coöperative associations on the Rochdale plan without actually solving the fundamental problems of the farmer. They have relieved the farmer from certain great abuses; they have blazed the way for true coöperative marketing.

For every commodity there is a best method of coöperative marketing. This best method must be worked out slowly, carefully, and scientifically. You who think in terms of coöperative marketing must also think in terms of the right plan, the right method for the commodity, the right men.

Coöperative marketing leaders must be men of unquestioned integrity, of coöperative spirit, of proved ability and experience.

America is strewn with failures of what are commonly called coöperative marketing plans. These failures are usually due to a lack of study of the fundamental needs of coöperative marketing.

The whole theory of coöperative marketing involves an effort by farmers to find an efficient method for stabilizing their marketing problems, and for eliminating part of the speculation and waste in the passage of products from the farm to the consumer.

The farmers of California grew desperate when they received an average of three cents a pound for prunes between 1907 and 1917, while the consumer during the same period paid an average of 16 to 20 cents a pound for the same prunes. Where there is



Aaron Sapiro is a lawyer, not a farmer, but in his capacity as attorney for the California Prune Growers' Association and a dozen other Pacific Coast coöperative associations he has become one of the greatest practical authorities on coöperative law, organization, and operation. He has assisted the Committee of Seventeen of the A. F. B. F. in their efforts to work out a satisfactory grain-marketing plan. We believe you will find this article interesting and full of information for coöperators. Mr. Sapiro lives in San Francisco.

no expensive process of manufacture intervening between producer and consumer, it is beyond reason to justify an increase of from 500 to 600 per cent in the cost of the product between the farm and the city mouths.

The farmers were kept in practical poverty under such conditions, and the consumer received no benefit from the farmers' misfortune.

THE farmers determined to make a change. They have bought liberty by their daring. The farmers whose products are marketed through coöperative associations on the coast are to-day, as a class, living toward the 1920 standard, with a fair chance of catching up to the city man in a few years. The trend to the city stops when coöperative marketing steps in.

Now, what must be present in *all* true farmers' coöperative marketing associations?

1. Marketing associations must be organized on the basis of *commodity* and *not locality*.

The man who buys the product does not care where it came from. He wants walnuts of a certain color, size, and shell content. He does not care whether they came from Ventura County, Los Angeles County, Orange County, Santa Clara County, or Contra Costa County. He wants walnuts, not geography.

The point where the walnut is grown is a problem of production.

The place where the walnut will be sold is a problem of marketing.

In coöperative marketing the association must therefore be organized on the basis of the commodity, and not on the basis of the locality of production.

In the Middle West there are literally thousands of marketing associations organized to market the products of their members—and others produced in their respective neighborhoods. Each of these associations becomes a competitor against the other. You have wheat competing against wheat, cheese competing against cheese, and corn competing against corn.

Food products should not compete against each other. The buyers should compete for the food products.

In California approximately 11,000 prune growers are organized into one central association covering the entire State.

There is no inner competition between groups of prune growers. The commodity is organized, not the locality.

This is the most important and fundamental contribution of California to the history of coöperative marketing. Organization by commodity spells intelligent marketing and stabilized prices.

ORGANIZATION by locality spells a certain amount of good as against local evils, but it does not make or stabilize prices or any other marketing condition.

It is all the difference between selling your product blindly on a market made by manipulators at Chicago, or having a good, strong voice in the making of that price yourself.

All the great manufactured articles of America, such as steel, shoes, and soap, solve their sales problems solely and wholly on the basis of the commodity, as such. The places where they are manufactured are chosen because of cheapness or economic convenience. The product, however, is sold as a commodity, regardless of point of origin.

[CONTINUED ON PAGE 6]

Blessed is the Man Who Can Mind His Own Business

THE big point that Aaron Sapiro makes in this article is that marketing farm products is a business in itself, and should be done by marketing experts employed by the farmers who produce the goods to be marketed. Let farmers get together, certainly. And let them control their coöperative organizations—by all means. That is strictly their business, and they can do it well.

But marketing is not a farmer's business, any more than law or medicine is. Therefore let him *hire a marketer*, and pay *him* well for knowing *his* business, just as he would hire a lawyer to fight a lawsuit or a doctor to cure a pain.

Blessed indeed is the man who knows his own business and sticks to it.

THE EDITOR.

It's No Easier to Star in the Movies Than It is to Star in Farming

By Dorothy Dalton

GETTING into the movies isn't any easier than doing anything else that is worth while in this world. I have had to work and think and plan and drudge to get a start and make a success in my pictures, just as you have had to get started and make a success of your farm or your farm home.

I didn't become a star overnight, by any means, though lots of folks who see my work now seem to think it was no effort for what they call "a pretty girl" to become a star. It takes a lot more than good looks to be successful in anything anywhere.

I had been on the regular stage for several years before I ever tried the movies, but even with my experience I had a hard time breaking in.

I was born in Chicago, and as far back as I can remember I wanted to be an actress. I studied at a well-known dramatic academy, and went on the stage, playing in stock companies and in vaudeville for several years.

One day, in Portland, Maine, for the first time in many weeks, I had an afternoon to myself; there was no rehearsal, no dress to be fitted, and no alteration required in my wardrobe—stock actresses spent most of their leisure time creating new frocks out of old ones, or making some old bit of wearing apparel looking like a Parisian creation, you know.

So I wandered into a motion-picture theatre. A noted woman star was appearing in a well-known production. I watched the movements critically, carefully, and with an absorbing interest which made me forget everything else.

"I can do that," I thought, "and I'm going to do it."

AN HOUR or so later a telegram went whizzing over the wires to Thomas H. Ince, producer of that picture, containing the uninteresting information that one Dorothy Dalton, actress in the Keith Stock Company, needed and wanted a job as a motion-picture actress. The answer—not a telegram, but in the usual letter form—"We regret, etc.," came with the discomfiting news that there was no vacancy.

Did I weep and feel disconsolate? I did not. I sat down and sent a message saying: "I am going to pay my own fare to California, and in return I want you to give me a trial. Leave Saturday night." Mr. Ince did not even take the trouble to answer—in all likelihood one of his secretaries received the wire and carelessly



This is a character study of Dorothy Dalton, the movie star who wrote this article, by Alfred Cheney Johnston, the artist. Miss Dalton appeals to us as being one of the most beautiful of the screen favorites

pushed it aside, forgetting all about it.

In about ten days I arrived in southern California. Mr. Ince was then established at the great Inceville Ranch near Santa Monica, probably the most romantic of all

motion-picture encampments. It was here that many of the famous William S. Hart pictures were made, and its great stretches of mountain and valley lands were peopled with cowboys, Indians, and Mexicans, liv-

ing according to their picturesque customs.

I refused to talk with anyone but the man I had traveled across the country to see. Mr. Ince, amused at my insistence at length gave me an interview, and cast me in "The Disciple," with William S. Hart. It was a typical Hart picture, redolent of the Wild West, and the character I was called upon to portray was one entirely outside of any I had ever attempted on the speaking stage. I had many doubtful and troubled moments during the making of this picture. Everything was new and puzzling.

Did this picture give me an immediate boost to the top pinnacle of cinema fame? It did not. After I had finished "The Disciple" I walked into Mr. Ince's office and asked: "What am I to do next?"

Mr. Ince looked at me, shook his head and said: "I don't know; frankly there is absolutely nothing for you now. You said you wanted a chance to prove what you could do before the camera, and I gave you that chance. Your future shows some promise; but there is nothing more just now. Give me your telephone number and when we need you we will let you know."

HERE I was, many miles from home, with a good job in the past and nothing in the immediate future. Perhaps some girls in my position would have broken down and cried, but I just couldn't. So I smiled and said pleasantly:

"Very well, I shall come again tomorrow; perhaps something will unexpectedly develop." And something did develop—"The Jungle Child" was ready for production, but there was no Ince player of just the type the author had in mind.

I walked into Mr. Ince's office at the psychological moment.

"Miss Dalton," said Mr. Ince, "I am going to cast you in the lead. I want a live performance, full of color and action. I know you can act, and on just how well you act in this picture hangs your future. If you get your smile and personality across, and give a performance that is unique, you get a contract; if you don't I shall be disappointed."

I listened. I not only listened but remembered, and when the picture came out the critics all said it was a success. It settled my cinema fate, and gave me the coveted contract and the opportunity to make good as a screen actress.

So far I have appeared in twenty Paramount pictures. The one I like best—"Half an Hour," by J. M. Barrie. It is my newest picture.

Coöperation as I See It

[CONTINUED FROM PAGE 5]

The farmer must awaken to this fact before coöperative marketing can successfully aid the problems of any commodity that is not actually sold to the farmer's next-door neighbor or at the next-door village.

2. A farmers' coöperative marketing association does not need capital. It needs something to market. Its basis should not be money, but long-time contracts with its members, under which they obligate themselves to deliver to the association all that they raise of the product to be organized. If the product must be processed or packed or stored, money will be needed to provide the physical facilities. This should be raised through a separate subsidiary corporation.

A brilliant plan of finance has been evolved for such subsidiaries by H. G. Coykendall, general manager of California Prune Growers' Association. Some day this plan will be detailed and recognized as a real contribution to the progressive farm movement.

The marketing association, however, must have something to sell, must make certain of this something by basic long-term contracts.

A contract for one year is worthless. It gives no opportunity to build up personnel or to make strong trade connections. The contract should be from three to ten years,

depending upon the particular product and its marketing and financing problems.

The contract must be strong. A rope of sand is just as useless for a coöperative marketing association as it would be for the bonds of matrimony. The California associations try to make contracts that will hold anywhere. They are doubly reinforced. They have been upheld almost universally by the courts, and they are respected by friend and foe alike.

3. A coöperative marketing association must not buy products at a fixed price from its members. The individual farmer may be the best producer in the world and yet be a very poor trader. For three hundred and sixty-four days in the year the farmer is a producer and spends his time and his thought and his knowledge in getting his farm to produce the most and the best.

One day in the year he suddenly becomes a trader. He matches himself on that day against men who are naturally adapted for trading, who are trained in the tricks of buying and selling, who are well connected with all the commercial channels and with the finance centers.

What chance has

the farmer in this combat? The only chance for the farmer is to coöperate with all other growers of his commodity, and then, together with his fellow farmers, hire a man who is trained and expert at marketing.

Throughout California the farmers recognize that they are not equipped with the training or the data to become good marketers. They have learned the wisdom of hiring experts to do for them what they cannot fairly and efficiently do for themselves.

Therefore, in California, it is the custom to grade products de-

livered by all members, pool the products by these grades, and then sell these pools from time to time as the markets will absorb the products.

Each grower receives from the proceeds of the sale of the pools his proportionate share. If he put in 10 per cent of the product in the "Sunsweet" pool of 30-40 prunes, he gets 10 per cent of the total net proceeds, from time to time; in short, he gets the season's average, together with every other man who contributed to the pool.

In this way no one farmer has to be a better guesser than the other man. They all get the fair price, and they all get the same price.

The man with five acres of prunes gets the same for his product proportionately as the man with a thousand-acre orchard—and they all get a price that is fair.

California associations do not handle products of non-members. Only growers are in the associations. Only growers are the directors of the associations. The products of these directors themselves are pooled and mingled with the proceeds of the products of all the other members. The directors have to look out for the product of each member or else their own return will be small.

The directors [CONTINUED ON PAGE 2]

Coöperation à la Pigs

A SPOKANE friend illustrates coöperation with an interesting story. Last fall, on a rather sharp day, he stopped at a stock ranch. There he saw a big Chester White sow with a litter of nine pigs. All the pigs were huddled into one pile to keep warm. The pigs were warm. They all seemed comfortable. Not one pig went into that pile to warm the other fellow. Each pig went in to warm himself, and by warming himself warmed his brother.

California has argued that, if a little pig can do it, grown-up men can go still farther.

Do You Know How to Tell When You Pay Too Much for Feeders?

By Tom Delohery

WITHIN the past six months, whenever I attended a conference of farmers, and the livestock marketing situation was discussed, the margin between the cost of feeders and the selling price of the finished product invariably was the subject of much comment. Never once did I hear just what margin was needed to make beef, pork, and mutton at a profit, but a whole lot was said about the increased cost of feeds and the high price of feeders.

Talks with individual farmers, both at these meetings and at the Chicago stockyards, revealed that for the most part the producers aim to buy their cattle, for instance, at a price which is five cents a pound below the top of the market for that day.

Just why this margin on cattle should be five cents a pound, and the daily top the guiding line, I haven't been able to find out, even though I asked scores of producers. And, after studying the whole subject, I am unable to arrive at any good reason for this custom. The only conclusion is that this may have been the producers' method of operating for years, and they still continue this plan, despite the increased cost of production, and the fact that the selling prices have not kept pace with production figures.

After finishing my trip through the market, I decided it would be a good thing to go back through the market records for a decade and see how this system of a nickel margin worked out. So I took the top and average cattle sales by months for ten years, and the same thing with top and average feeders, and compiled two tables.

And, after studying the margins represented not only by comparing each month's figures, but three to six months ahead of a given month, I want to say this: At no time during the past ten years, on the average, have you been able to buy feeders and sell them after a 90, 120, or 130-day, or even a year's, feed and get a margin of five cents a pound.

UNDERSTAND, this is the average I am talking about. I have known producers who got a margin of as much as ten cents a pound, but more often the difference will be as represented in these figures.

If you bought top feeders in January, which is the lowest month, and sold them in December, which the table shows to be the highest month for beef cattle, you would get a margin of \$4.50 per hundred pounds. Moreover, this is the highest margin of the year, but it by no means says that the greatest profit will result in feeding for a year. The cost of gains would be so great as to wipe out this margin.

Taking the same months for average feeders and beef cattle, the margin would be much lower, because, while January is the lowest month for feeders, December is not the month when the average price of beef cattle is the highest. July, the figures show, has the biggest price; and, even at that, the margin between January and July is only \$3.90 per hundred pounds. It is more than likely that the producer would stand a better chance of making a profit with the average grade.

Here is the table on cattle of averages for ten years:

	Top Cattle	Top Feeders	Avg Cattle	Avg Feeders
January ..	\$10.90	\$8.75	\$9.00	\$6.90
February ..	10.95	8.80	9.00	7.20
March	11.15	9.25	9.35	7.75
April	11.40	9.50	9.70	7.95
May	11.55	9.60	9.80	8.10
June	11.35	9.25	9.85	7.55
July	11.80	8.95	10.80	7.10
August	12.45	9.10	10.30	7.45
September ..	12.60	9.30	10.35	7.35
October	12.80	9.30	10.00	7.10
November ..	12.95	9.30	9.80	7.10
December ..	13.25	9.30	9.60	7.05

These figures do not mean anything in

the way of telling you what you will get for your cattle in any month, but they do show the average margins as they have been in the past ten years. The real value of this table does not come in a comparison of each month's prices, but in figuring ahead several months—that is, about the time

to learn that the margins were so small.

Mr. Hunt said he never figured out what margin he needed, but just went ahead and made beef, pork, and mutton as best he knew how. The only accounting he made was at the end of the year. He urged me to get the figures on feeder pigs and lambs, too. I have the sheep, but failed to get the pig figures, because this feature of the market has not been operating long enough to permit fair comparisons.

"The margin between the cost of feeders and the selling price of the finished article," said Mr. Hunt, "is something that

This is Miss Dowe sighting over her fire finder in a hunt for trouble



One of Uncle Sam's Two Women Fire Fighters

ON THE entire staff of the United States Forest Service there are but two women holding the posts of lookouts. And Miss Helen Dowe, twenty-four, dark-complexioned, and not a bit hard to look at, is one of them.

Her "office" is a tiny glass-enclosed observation tower, 150 feet above the topmost pinnacle of the Devil's Head Peak, Colorado. Her sphere is not limited by the four edges of a desk, but takes in 1,000 acres of our national forests, and it is her job to see that fire, the ever-threatening enemy to our big timber, makes no headway.

Instead of a typewriter, her working equipment is the strange-looking device you see—a mechanical fire finder. It is used by the department to locate forest conflagrations. In reality it serves two purposes—it is also a mapping machine.

By horizontal and vertical movements, a pointer is caused to follow the ridge lines, gulches, lakes, and other clearly defined outlines of the surrounding country. This motion causes a pencil on a ratchet to sketch automatically a picture of the observed areas on a celluloid circle attached to the instrument. When the relief map is completed, if a fire is detected the pencil mechanically points out its location on the map.

Since Miss Dowe took up her work in 1919, she has sighted fifteen fires, but as her eyes are sharp she has been able to dispatch rangers to the different points in time to prevent any big damage. The toll taken by fires in the Pike national forest since she occupied the station has been less than \$100.

For company she has the little animals of the woods. The chipmunks, squirrels, grouse, and rabbits keep her from getting lonely. She knows them all, and has a characteristic name for each of them. "Limpy," a lame rabbit, is one of her most constant friends.

During leisure moments she saws and splits her own firewood, and carries water for her personal use from a spring a mile below the station. She has also found time to paint and varnish the woodwork and furnishings of her tower to give it a truly feminine and artistic appearance. And she likes it all—her work and the solemn lonesomeness of the big woods. It's much better, she says, than the hurry and rush of the daily newspaper where she formerly was employed on the art staff.

S. R. WINTERS.

your cattle will be ready for market. Then you can see what has been the margin for ten years, and figure if you can produce beef cheap enough with the top or the average class of feeders.

I compiled this table originally for my own enlightenment; I had no intention of using it in an article. However, when I related the facts to Charles Hunt, of Logan, Iowa, president of the Iowa Farm Bureau Federation, and one of the biggest feeders in the corn belt, he was very much interested, and urged me to publish them. Mr. Hunt didn't know the things this table shows, even though he has been feeding for the last thirty-five years.

John G. Brown of Monon, Indiana, and Howard Leonard, president of the Illinois Agricultural Association, both feeders of long standing, urged publication of the table. They, too, were interested, and asked me many questions about different months. They were very much surprised

every farmer would like to know. These figures are especially interesting from several viewpoints. In the first place, they show we pay too much for our feeders. This fact has often been contended, but I never saw anything that so clearly proves it as these comparisons.

"In addition to this, they show that, while feeder prices have been increasing, because of the packer demand for thin stock for canning purposes, the selling price of finished beef has not increased accordingly. The cost of production has almost doubled in the last few years. Several years ago, before the war, we could get corn below \$1 a bushel, but last winter, and part of this year, we fed \$2 corn into our cattle; however, the price now is not double what it was several years ago. We have had to stand this increase, with the result that many of us feeders lost lots of money.

"Feeders will have to pay more attention to the business side of producing, or they

will continue to lose large sums of money. I know many who went broke last winter. Your figures give us something basic to go by in the purchase of thin stock, and they should prove very useful to the man who sits down to figure out what he will buy. With these tables he knows beforehand what the margins have been, and he can roughly estimate the cost of production. Then he can see what price he can afford to pay for thin cattle and have a chance to come out with a little money."

As I said before, I can't see where it is a good idea to base the needed margin on the top of a single day's market; in fact, I can't see the plausibility of figuring on the top price at all, because comparatively few loads register at the best figure. I believe that, taking the year as a whole, less than three per cent of the cattle coming to the Chicago market sell at the top figure.

TAKE to-day, as an example: We have about 1,000 loads of cattle at Chicago, and about 60 per cent of this run is steers. This means 600 loads of beef cattle, and only one of them topped the market. Therefore, why should a man base the price he will pay on the top of the market, when only one load out of six hundred reaches that level? There doesn't seem to be any logic in this practice.

While I cannot say whether or not every load of top feeders is made into the best priced cattle, yet I am of the opinion that not all of the best feeders finish into prime cattle. My reason for saying this is the fact that most every day several loads of prime feeders are sold, but it is an exception when we have more than two loads of beef cattle to sell at the top figure.

And I believe that the idea of buying the best feeders is, in a great many instances, prompted by vanity rather than good business sense. That the best is the best in the long run will hardly prove true in the feeding business. The man who feeds anything that will make him a dollar, regardless of its class, will profit more in the end.

True, we all like to have the best stock around our farms. This seems to be a fascination with producers, and I have seen many of them pass up bargains on plain cattle in order to pay more for a better grain. The plainer cattle, too, offered a better chance for profit.

In the feeder market for pigs, the records, as I said before, have not been kept long enough to make fair comparisons, hence I am passing them up. I know, however, that the margin there is small, the price of feeding pigs generally being 50 to 75 cents lower than the price of market hogs.

THIS trade has expanded greatly in the past few years, probably due to farrowing losses and good corn crops in the Middle West. These hogs are raised in the alfalfa belt of the West and Southwest, where grain is scarce, and farmers find it more profitable to sell the pigs weighing around 100 pounds than to buy high-priced grain and finish them out for market. Behind cattle these pigs should make money, but I don't know how well they will do when fed alone in dry lot or on pasture, unless the price of feed is in keeping with the price of hogs. To that end, I mean that the hog market be equivalent to 12 or 13 times the cost of a bushel of corn.

Behind cattle there is no telling how much corn is required to make 100 pounds of pork. Different feeders have told me that as low as six bushels will do when there is a fair amount of droppings. Other men do not feed any corn at all, putting in just enough hogs to clean up in good style, and feed only tankage.

John G. Brown, a few days ago, said it required between 11 and 12 bushels of corn for him to make 100 pounds of pork, and he is a good feeder.

A study of the figures on the lamb-feeding business, which [CONTINUED ON PAGE 18]



Drake made a desperate snap at the boar's foreleg—a fatal move, and the dog knew it

The Immortality of Drake

By Warren H. Miller

Illustration by Douglas Duer

I TELL you, Gosh, you got tu shoot that there boar houn'," declared the overseer harshly. "Shoot him, or send him away. The doctor's wild oveh this ram-killin'! 'Tell Gosh to dispose of that brute, immediateleh!—that's what he's telephoned me from Town House. He's comin' out in the cyar, d'rectleh."

Gosh leaned against a veranda post of the plantation overseer's bungalow, chewing a straw in dejected misery. The wild turkey slung over his shoulder, which he had brought in as a peace-offering, dropped unheeded to the porch, its bronze glories of wing and breast feathers falling in limp disarray.

"Ef 'twarn't that buckkety ole ram-goat that ma Drake-dog killed, I hain't got a word to excuse him," he retorted glumly. "He ain't never touched no sheep before. But thet ole rip-snorter—sho' spil'in' fo' a fight, he was! No wondeh Drake kinder forgot hisself! Waal—hit's done, now."

"You bet it's done—good and plenty!" replied the exasperated overseer. "The doctor set gre't store by that impo'ted Beloochistan ram. Stood him over eight hundred dollars to get him heah from England, Gosh. Hope you done tied up that dawg of yourn! The doc's mighteh quick-tempered, an' jist the sight of him—"

Gosh's green eyes glared under the

pulled-down brim of his felt hat—he'd like to see *anybody* try to shoot Drake! But he *had* tied the dog up. There was no question as to who had killed the doctor's imported ram the night before. Only one dog on the plantation left such enormous tracks as did Drake; old Tad and half a dozen of the stock-house niggers had seen the fight—the massacre, rather. Babbling, with rolling eyes, they had described the whole affair—the pugnacious ram just arrived from England stamping about in his pen, his bucking challenge, Drake's mighty leap over the palings, and then the single slash of his inch-long fangs that had cut the ram's throat. Before a soul could

interfere, Drake had vaulted back over the fence and bolted for his kennel.

"Waal, Ah's makin' maself might scarce," resumed Gosh, after a long, awkward pause. "Tell the doctor that Ah mighteh pow'ful sorry. Give him this ye turk. Henry-dawg run him up yesterda down by the branch, an' Ah got him flyin' with a load of sevens. So long! Ah'll back in mebbe a week, when he's had tir to cool off. Ah'll try tu git him a pin hawg fo' a make-peace."

Gosh turned away and slouched across the cotton fields toward Great House, leaving the overseer to await the doctor's scathing wrathfully [CONTINUED ON PAGE 1]

You Can Get Rid of Potato Scab Just Like George Hays Did

By Dr. W. H. Martin

Associate-Plant Pathologist—New Jersey Agricultural Experiment Station, New Brunswick, New Jersey

JIM ELLIS was talking. Jim usually was—he was prepared at any time to discuss anything from St. Paul the apostle to St. Paul the railroad. On this occasion the subject under discussion was potato farms.

"I see that George has bought the Gates farm—surprised at George; to the best of my knowledge, and I've lived here off and on for 35 years, there ain't been a clean potato grown on that farm.

"Why, just last year the field down by the pasture was in potatoes, and they fed them to the hogs. Yes, sir, if George aims to grow scabby potatoes he has picked the best farm in the country for it. He sure will have plenty of hog feed next winter."

Jim was correct in two of his promises. George Hays had bought the Gates farm, and it was an acknowledged fact that the farm had never grown clean potatoes.

Jim was way off on his last statement, however. George did not intend growing potatoes for his hogs. Jim Ellis was of the old school. He had long ago decided that scab was caused by either lime, manure, or grubs, and he was firm in the belief that if scab was in the soil it was there to stay.

George Hays, on the other hand, was a potato grower of the more modern type. Having successfully grown potatoes on two farms for a number of years, he had decided to purchase a third. For years he had cast his eyes in the direction of the Gates farm, one of the best in a county recognized as having some of the most prosperous potato farms in the State. The soil was the kind that he knew, with proper treatment, would turn out potatoes to the extent that even his critical eye would be pleased. There was that drawback, however—scab!

For a number of years George had watched Gates haul his crop to the barn and grade it, finally hauling a portion to the market and feeding the remainder to the stock. Now, after some years of this, Gates was ready to dispose of the place at a very reasonable figure, but no one was willing to buy, as only good potato farms were desirable in this section of the country.

George wanted the farm, but he didn't want to raise scabby potatoes, so he determined to see if there was not some method of getting rid of scab in the soil. It was not long before he heard of a method. He went to the bottom of it. At first it was difficult to grasp, but he finally got it.

In the first place, he found, his neighbors' views to the contrary, that scab was not caused by lime or grubs, but by a bacterium. He next found that this bug, as he decided to call it, liked a sweet soil. This at once explained why he had so often seen so much scab on potatoes following alfalfa. At the same time he realized that lime was not the cause of scab. This was the most difficult part. He grew to understand, however, that where lime was used the soil was made sweet and the scab had a place to grow and work that just suited his hushup. By this time in George's education, he was almost ready to buy the farm; but still he hesitated.

He next learned that while the bug that causes scab thrived on a sweet soil it would not grow on an acid or sour soil. With this

information came the knowledge that the state experiment station was using sulphur to get rid of scab, working on the principle that the sulphur was changed to an acid in the soil, thus making it sour, with the result that the scab bug would not grow, while the potato thrived as well as ever. George then bought the farm.

This is Dr. Martin, the author of the potato-scab article. He tells the story of an actual case that came under his notice during the time he was conducting the experiments with the new inoculated sulphur

went to buy it, the salesman attempted to sell him coarsely ground sulphur. He had been warned against this, however. The coarsely ground sulphur would not change to an acid in the soil as quickly as the finely ground material. He finally secured the kind he wanted.

The method he adopted in making the sulphur application was to apply it, just after the ground was harrowed, at the rate of 400 pounds per acre. He soon found that a grain drill gave the most uniform distribution. By setting the teeth several inches in the soil the sulphur was thoroughly mixed with it.

He had sulphured half the field with the commercial sulphur when he received several bags of sulphur from the experiment

much better control of scab than in others. The scientists were puzzled about this themselves, until they discovered that if the right bacteria or bugs weren't present in the soil when the sulphur was applied, no good would result.

On the other hand, if the proper bugs were present the sulphur would oxidize and the desired results would be secured.

After this discovery was made the next step was to find some means to insure that the sulphur applied to any soil would oxidize. This was accomplished by growing the bug that oxidizes the sulphur in large numbers and inoculating sulphur with it. The sulphur George had received from the experiment station was inoculated there just as he himself would have inoculated

his alfalfa before seeding. While it was not all clear to him, he decided to use the inoculated sulphur on the remainder of the field.

When the sulphur was applied he went ahead and planted his crop, and thought no more about it. Not so his neighbors. They hadn't as yet recovered from the shock of George's buying the farm, and then there was a mystery connected with it. Just why had he sulphured the field?

DIGGING time finally came. George had, from time to time, compared his field with others in the vicinity, and could see no difference in the vines, so he felt certain that the sulphur hadn't injured the crop. As he started to dig, several neighbors happened by with their trucks piled high with spuds, and they weren't all clean—scab was very bad that year. They stopped and watched as the first several rows were turned out, and nodded—there was scab, and plenty of it. Their opinion was confirmed. Poor old George!

George was wise though—he had left these first rows untreated. He wanted to see for himself just how much difference the sulphur would make. About this time the digger was turning out the rows treated with the commercial sulphur, and even the knowing ones perched along the fence opened their eyes—the potatoes were most all salable. George was tickled. He couldn't wait for the digger to reach the rows where the inoculated sulphur

had been used, so he started digging there at once, and then he stared. The potatoes, as they rolled out from the ground, were not only almost entirely free from scab, but they were also as bright as a dollar—the kind that warms the heart of the buyer.

Jim Ellis was talking. He usually was. This time he wanted to know:

"How did you do it, George?"

"Well, Jim," replied George, "it isn't much of a mystery. After I had fitted the land for planting I applied sulphur at the rate of 400 pounds per acre. You saw that the rows where I had put the commercial sulphur were cleaner than where I had none, and you can see here that the rows treated with inoculated sulphur are still cleaner. I tell you, Jim, I'm through with potato scab on this farm. Don't want to buy a good farm, do you?"

Jim muttered something about new-fangled ideas, and walked off. He had to admit that George was right. He would have to buy his hog feed.

Incidentally, a great many farmers are doing just what Hays did. Why don't you?



The Way This New Treatment Was Discovered

DOCTOR MARTIN, the author of this article, has made a special study of the diseases of plants, and a special study of potato scab. He had a large part in the New Jersey investigation that developed the new sulphur treatment for potato scab, personally conducting many of the experiments.

In 1914 he was graduated at the University of Maine, and in 1917 he was graduated at the University of New Jersey. On the day he received his degree, Doctor Martin enlisted in the air service, and was soon commissioned an aviator. He was again one of the first to leave the service immediately after the armistice was signed, and went right back at his old job of working out the solution of the cure of potato scab.

Doctor Martin is the man who finally supplied the missing link in the chain which has made it possible for the farmer to grow potatoes with any assurance that they will not be scabby, or who has made it possible for a farmer to grow a crop of potatoes in a crop rotation, or who has developed a method of growing clean potatoes on land that has been limed for other crops.

By the discoveries Doctor Martin describes in the accompanying article, even fields where over 90 per cent of the potatoes were scabby, a man can grow almost a perfect crop.

Doctor Martin supplied the missing link in this way: For years sulphur has been tried by many investigators in different ways as a means of stopping or reducing scab, and in almost every case the results have been variable.

Doctor Martin found this true in his work. He found that on some fields the sulphur remained almost inert, or that, after the growing season, the sulphur applied to the field was there in the field almost the same as at the start.

Doctor Martin found, however, that if the soil had a certain degree of acidity the organism which caused potato [CONTINUED ON PAGE 19]

He decided to venture lightly the first year. In his study of the use of sulphur for scab control, he found that under certain conditions the yield was reduced, due largely to three causes. In the first place, where 900 pounds or more sulphur had been broadcasted there was a tendency toward reduced yields the year following the sulphur application. In another instance a decrease in yield had resulted where the sulphur was mixed with the fertilizer. The third case resulted from applying sulphur in the row at the rate of 600 to 900 pounds per acre.

Where sulphur was properly used, there was very little decrease in yield, and in those cases where there was a slight decrease the difference was more than made up for by an increase in clean potatoes. He decided to go slow the first year, however. There was one field in particular that had grown very scabby potatoes. He determined to sulphur this field in order that the method might be thoroughly tested.

As a result of inquiries made at the experiment station he found that sulphur flour was the material to use. When he

station, with the request that he use it on this farm. George's hump of curiosity was aroused when he learned that the sulphur had been inoculated, and he immediately asked two questions:

"What was it inoculated with? And why?"

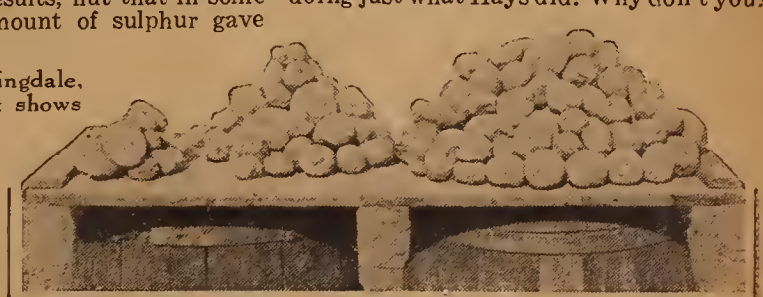
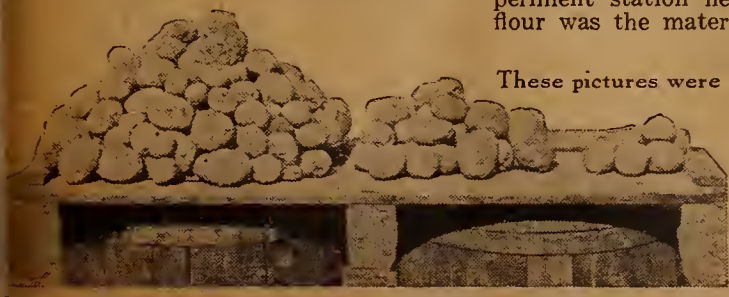
GEORGE wondered. And then he learned that the experiment station people in their work with sulphur had found that the change to an acid in the soil was accomplished through bacteria. Another kind of bug. George realized then that there were both good bugs and bad bugs.

Not so many years before this he had had it impressed on him that to grow alfalfa without first inoculating the seed was next to impossible. He was not just certain why this could be, but he had seen it demonstrated and knew it to be true. He had adopted this as a fact.

Here was a new one, but in the end it amounted to the same thing. He found that, in a number of tests, commercial sulphur flour applied broadcast had given very satisfactory results, but that in some fields the same amount of sulphur gave

These pictures were taken on the place of J. H. Morris of Farmingdale,

New Jersey. The photograph to the left shows the results from an untreated field, the unsalable potatoes being in the big pile, the saleable being in the second, and the perfect potatoes being in the third pile. The picture on the right shows potatoes from a treated field, with the perfect potatoes in the big pile. Some showing isn't it? The Editor.



A System of Marking Livestock That Will Cut Your Shrinkage Loss

By Charles Haffner

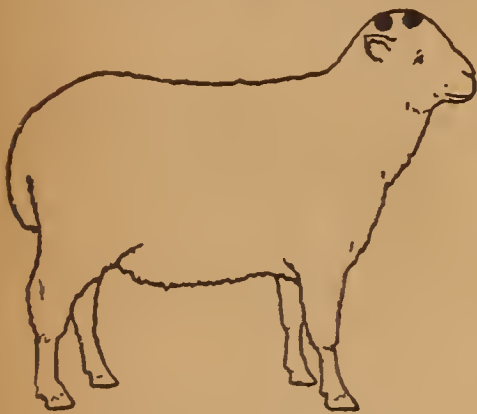
NO DOUBT you've often wondered why your livestock loses so much weight en route to the buyer. I admit it is hard to understand, unless you've followed a shipment in person from your own shipping point to the buyer's yards, where the final weights are taken. What makes it harder to understand is that the greatest shrinkage is due to a factor within the control of the shipper, and takes place after the stock reaches its destination.

The fault lies in the many different ways and places of marking stock before shipment.

When we have to search for a mark it means moving the animals around. When cattle, or any livestock for that matter, are moved around often and long enough it naturally causes shrinkage.

We used to get stock marked in every conceivable way. Some were painted all colors of the rainbow; others were clipped. To make it more confusing, one steer might be marked on the neck, the next on the hip, and so on. It was much harder with hogs, but not so much trouble with sheep, because paint was used all the time.

I have been in the livestock commission



This figure shows how sheep are marked—two dots on head

	CATTLE AND CALVES	HOGS	SHEEP
Owner No. 1	No mark	No mark	No mark
Owner No. 2	I right hip	I top shoulder	. top head
Owner No. 3	II right hip	II top shoulder	. . top head
Owner No. 4	III right hip	III top shoulder	. top shoulder
Owner No. 5	IV right hip	I back	. . top shoulder
Owner No. 6	V right hip	II back	. rump
Owner No. 7	VI right hip	III back	. . rump
Owner No. 8	VII right hip	I rump	
Owner No. 9	VIII right hip	II rump	
Owner No. 10	IX right hip	III rump	

The marks on the cattle and hogs are made by clippers or shears. Shears with blades seven to eight inches in length serve this purpose well. Paint or a good dye may be used in marking the sheep, but it should never be used to mark cattle or hogs, as it becomes smeared and the mark cannot be distinguished. Ear tags are not satisfactory, as they are difficult to read and often-times are lost

business for eight years, dealing mostly with coöperative associations. In my work I have seen all kinds of markings—that is, I did up until I got all our patrons to adopt a uniform system which I drew up with a great deal of thought.

Since this has gone into effect, we know where every animal is marked, and with a record of the mark which we get from the shipper or shippers it is easy to keep each man's shipments separate.

Uniform marking is especially helpful in coöperative marketing, and I have noticed that the association manager who keeps up with the times, and knows the methods and manner in which livestock is handled after arriving at the stockyards, is the manager who gets the greatest returns for his organization. But uniform marking is not for associations only, it is applicable and helpful to everyone in the livestock game.

The method is simple. It consists of cutting the hair coat of cattle on the right hip all of the time. We advise the use of Roman numerals up to ten. After that any two letters may be used—that is, letters which are easily made.

Say, for instance, nine farmers bring in

32 animals—enough to make two cars. When the stuff is brought into the country yards, the manager lists it on his record, and after the name of the owner puts the mark placed on the animals. If one man has six steers, for instance, and he is the eighth man to come in, all of them will be marked VIII. When it comes to sorting them in the yards, it is easy to see to whom they belong. And with all marked on the right hip, only one sorting is necessary.

THE cuts should be made deep enough so they will be readily determined even when the hair coat is roughed, as usually is the case after animals have ridden long. The accompanying illustration shows how our customers mark their stock.

We advocate four ways of marking hogs—that is, on four different parts of the body, all of which can be determined at a glance. These places are on the back, neck, and rump for short verticle clips, and the back for long horizontal slashes.

As a general rule, a load of hogs will have several times the number of owners as will a carload of cattle. This is to be expected, as a car of hogs generally outnumbers a car

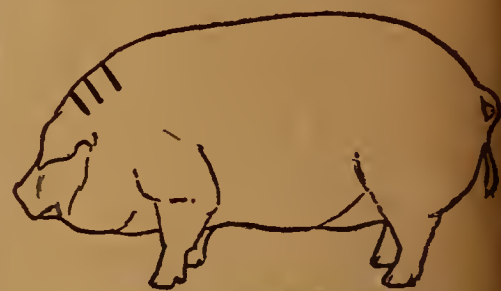
of cattle by three to one. Then, too, practically every farmer raises a hog or two more than he has use for.

Uniform marking in hogs is a big advantage, because hogs shrink greatly when moved around. The longer they are allowed to remain quiet the bigger will be a fill, and this means money.

PAINT has many drawbacks in marking livestock, but it is about the best thing to use when marking sheep. Cuts in the fleece, unless they be very deep, would not do. And if the fleece is deeply cut it hurts the pelts, and the buyers won't pay as much money for the animal in that case.

A bright red, bright green, or a dense black paint may be used to best advantage in marking sheep. The sheep can be marked in three places—head, shoulder, and rump. In marking, the paint should be as thick as possible. Then one good dab, with a round brush measuring about one inch, will do a good job.

I hope that every country manager who reads FARM AND FIRESIDE will think this over. I have found it to be quite a help in my connection with the business, and anything that goes to make the job simpler will help just that much toward making the country manager's job easier.



It's easy to see here how hogs can be quickly identified by the clips on neck, back, or rump

The Immortality of Drake

[CONTINUED FROM PAGE 8]

out from Piedmont. Brevoort was a smallish plantation of about seven thousand acres, but it was the doctor's pet, his trying-out ground for dozens of new agricultural experiments before putting them through on a large scale down at his twenty-thousand-acre main plantation of Gadsden. Siberian hogs, Beloochistan sheep, Aseel game cocks, Japanese pecans, Manila hemp, Kabul indigo, Siamese pepper, Hedjaz dates—all sorts of overseas sub-tropical products were experimentally cultivated here, for it was the doctor's firm belief that Brevoort could grow anything found on the thirty-sixth parallel around the whole world.

GOSH was just Gosh. If he had a last name, no legal mention of it existed. For generations his family had been the plantation hunters and game-keepers of Brevoort. Slender but wiry, leather-faced, with green eyes and high cheek bones, there was a strong dash of Cherokee or Choctaw in him somewhere. He generally clothed himself in some ragged, cast-off flannel shirt of the doctor's, and a suit of old clothes from the same source. His black hair, cropped short in a circle around his red neck by Crambo Yow, the plantation negro barber, had that intense blue-black luster that comes with Indian blood. Perhaps thirty-five years old, all his life he had been a swamper, fisherman, and hunter for the plantation, keeper of the doctor's dogs and his own pack. Up to a year previous he had lived in a lonely shack "up the branch," with Drake and his hound pack as sole companions. Lately he had been given a cabin up near "Gret Huis," the better to look after the doctor's own bird dogs.

Gosh hurried thither now, for he had no desire to face the first fierce anger of the

doctor, driving in from Piedmont by way of the overseer's bungalow. A dread that something irrevocable would happen to Drake if the dog were found at his kennel near Great House urged faster his long tireless strides.

As he approached the plantation manor, a doggy chorus welcomed him. The diapason of Drake's ferocious, deep-chested roar served as an undertone to the musical bell-ing of the hounds and the higher pitched barks of setters and pointers. But it was to Drake's kennel that Gosh hastened. The giant boar hound leaped up with exuberant affection, his paws on Gosh's tall shoulders, his bearded, fuzzy head over-topping the man's by six inches.

"Down, y' ole scoundrel, down!" he ordered, laughingly disentangling himself from the chain links, "Quiet, y' ole fool! We gottu git outen heah, right smahrt sudden!"

He unsnapped the chain hook, and Drake bolted off in ecstasies of delight, his progress marked by flying clouds of guinea fowl and scuttling bevvies of long-legged game cocks.

"Come back heah, Drake! Heel, you great devil!" yelled Gosh, blowing his whistle. Drake came lumbering back, nearly knocking his master over with a ropy tail as he wheeled to position at the man's heels. They set out through a young pecan grove for the nearest creek branch. Gosh had no certain objective. To flee from the doctor's first wrath and lay low for a time in the old swamp cabin, then to round up with Drake's help and shoot a "piney hawg," as the wild boars of the region were called, by way of further peace-offering—this was as far as the bewildered hunter, overwhelmed by his sea of troubles, could plan.

The pair melted into the cane brake, the only thing still thick and green amid the December browns and yellows of myrtle, briars, and broom grass that bordered the tall cypress forest of the swamp. Out near a "pawnd"—an islet of long leaf pines in the limitless fields—a nigger was singing to his mules as they turned ground for the winter sowing. Here, in the dense leafy cane, under giant long-leaf pines and bottle-trunked Carolina ash and cypress, they could move along unseen, unreported by the niggers at their third cotton-picking, unobserved by any mammy on her shack "po'ch"—she whose garrulous tongue and beady eye scanning the world over black corncob pipe usually gave the whereabouts of Gosh to the doctor's scurrying plantation flivver.

MILE after mile Gosh and Drake threaded through the laurel and bay thickets of the creek, the man dodging ropy vines armed caterpillar-fashion with spiny thorns, the dog snuffing game tracks and passing them by with indifferent snorts. Only one track ever interested Drake—piney hawg—unless it might be an infrequent black bear. He ran mute, an inestimably valuable quality, for a wild boar can run like a deer, and a howling pack of hounds will give him warning enough to scare him out of the county without the hunters' ever having sight of him. But Drake's method of attack was a silent rush, until at close quarters with the boar, when his rapid volleying bark would hold the creature at bay and give Gosh time enough to come silently up and administer the only death shot that would kill him—a solid ounce ball from a twelve-gauge shotgun.

It was toward nightfall when they reached Gosh's former home up in the

bayous of the Santee. An old clearing, grown up since the war with loblolly pine was hemmed about with the tall cypress tops of the creek branches on every hand. A freedman nigger had once lived here. Then the general shrinkage of cultivated land all over Brevoort that had followed the war had abandoned this spot to nature. Its gray roof of split shakes, its weathered walls of rough-sawn yellow pine, with sashless windows and pine-knot binged door, greeted Gosh's eyes as he pushed out toward it through yellow broom straw, waist-high. Small wild animals scampered out of the abandoned kennels, and burrowed into the underbrush as they approached; a corn snake weaved swiftly for his lair under the shack.

Opening the door, Gosh started a fire in the rusty stove, while Drake lay down before the cold hearth of the mud-and-stick chimney. Sundry tin cans of cornmeal, coffee, sugar, and beans were opened from Gosh's store in a pantry closet, and a brace of quail, shot on the way down, were split and set to grilling in a greasy black frying pan that no period of disuse could rust. Then he started a fat-wood fire in the chimney, and prepared an ash cake of corn grist and water.

Drake watched the proceedings with intelligent eyes. His master began talking to him, as was his wont after long and severe periods of reflection.

"Drake, yu ole snoozer, yu've gotten me into a peck of trouble, this time! But yu and I is goin' tu stick it out till the doctor gits oveh his mad—you heah me, you ornery scoundrel?"

Drake thumped his tail on the boards with loud applause. This expedition was, of course, for piney hawg. He understood that; this was their [CONTINUED ON PAGE 34]

How My Old Professor Surprised Me by Succeeding as a Farmer

By Vance W. McCray

YOU have probably heard the statement that most agricultural college professors would go bankrupt if they undertook to operate farms of their own, because their theories would not work out in practice. Here's one case at least where the doubting Thomases were wrong.

Last year a well-known professor was transplanted from the lecture-room to the plow, and he has made good in no uncertain way.

He fed out 150 head of steers and some pigs, and after charging off interest on the investment, the cost of labor and feed, and including the profit on the hogs which followed these steers, he made a net profit of \$5,970, or \$39.80 per steer.

He then showed that he could judge cattle as well as he could feed them, by buying a bull calf for \$4,100, for which he was offered \$20,000 one year afterward, but did not sell.

It was my privilege to spend three years of my college course under the instruction of Prof. W. H. Pew at Iowa State College, so when I passed through his town I yielded to the temptation to stop off and visit him. The ex-professor met me at Ravenna with his car, and drove me six miles out to his 1,100-acre farm, of which 700 acres are under cultivation. In the 400 spring-watered acres of woodland pasture I found Scotch Shorthorns in the prime of condition. His stock barn is equipped to tie up 250 head, and is supplied with running water and electricity. There are two silos, with a combined capacity of 450 tons.

"Now here is a problem which I did not have to contend with out West," said Pew. "If we raise a big type of corn it will not mature. The small variety will mature, but does not have the stalk, so I raise half and half of each, which makes a very good silage. I find that the Silver King variety will mature under our conditions."

LAST year, Pew started his herd of pure-bred Shorthorns with a few good females and a top-notch bull. In order to feed up his crops and get the benefit of the manure, he bought 150 feeder steers. After figuring the interest on the investment, the cost of labor and feed, charging the steers \$10 per ton for silage (with only half of it from mature corn), \$20 per ton for mixed hay, and the purchase price of other feeds, he cleared a net profit of \$39.80 per steer, after feeding them from 90 to 120 days. Whenever there were enough in the bunch which were ready for market to make a carload, they were given a ride to Pittsburgh. The steers were sold on the market at Pittsburgh, and the hogs at Cleveland. Mr. Pew claims that he has a better market in the East than is to be had in the big stockyards of the Middle West.

"I go to Chicago for most of my feeders, but I sell the finished animal for a better price, and with less shrinkage, on the Eastern market. I feed my steers a ration of silage, clover hay, corn, oilmeal, and molasses feed. This year I cut out the oilmeal, because of its high price, and increased the allowance of molasses feed, giving each steer seven pounds. The molasses feed, if a good brand is purchased, will make a slicker finish, cause the cattle to drink more water and consume more rough feed, which is the cheapest part of the ration, and greatly shorten the feeding period. There are two tank heaters in the water tank, and if the temperature goes down to zero the steers still have a warm drink whenever they come to the trough. It is

cheaper to heat it with fuel than with feed."

Pew has an unusual knack for judging young animals. In November, 1918, he purchased a young bull for \$4,100. He showed this calf at the 1919 International, and he was defeated only by the Grand Champion Shorthorn. Many men had picked Pew's animal as the champion. Pew refused \$20,000, offered by three different breeders, for the bull. He was also offered a flattering price for some of his females, but he did not sell.

"If they are worth that much to someone else, they are worth that much to me until I get a larger herd. I am in the business to stay, and I cannot sell my best stock and still hope to breed the best."

He started out with a limited number of animals, and is not trying to sell many until he gets his herd developed. When he does put them on the market he will have the kind for which there is a demand. This year he is not feeding so many steers, having a few less than 100 head. He is a great believer in saving barnyard manure, and keeps his steers well bedded, both in the shed and out in the lot.

"Manure is our gold," was Pew's comment. "The men out West, where land is so fertile, have not come to realize its value as yet, but they will before long. I try to have enough manure to cover from 300 to 350 acres every year."

AFTER dinner we drove back to the pigery. It is situated on a little hill in the heart of the wood lot. From start to finish, Mr. Pew has carried out the theories which he taught us about swine management. You will not find a more practical hog farm in Ohio. Everything is designed to save labor and time. In this hog house are many windows. At any time the sun shines it reaches the pens. The house is built of hollow tile, and is 160 feet long, 30 feet wide, and 6 feet to the plates inside. It has a driveway 10 feet wide, and the farrowing pens are 7 feet 6 inches by 9 feet 4 inches.

"I raise the big-type Po-

land-Chinas, and wanted the pens to be large enough so the pigs could stretch out and not be curled up," Pew said.

There is a heater which warms the drinking water and heats the building. In one corner of the building is a finished room which serves as an office and a sleeping-room for the herdsman at farrowing time. The windows are all placed in the roof. Running back from the hog house are lanes which lead to a 400-acre field of blue grass, clover, and alfalfa, which is cross-fenced and hog-tight. Joining this is a wood lot with a spring brook, where the hogs find a haven of comfort on hot summer days. The hogs eat from self-feeders, and with this efficient arrangement one man can take care of all the hogs by devoting but a part of his time to that task.

Colony houses of the Iowa type, but somewhat larger, being 8 feet by 12 feet by 40 inches, dot the fields. As winter approaches, the colony houses are drawn in on their runners from the fields and placed around the farrowing houses. These are the winter quarters, about four or five sows being kept in each house. Large racks near by furnish a constant supply of clover. To stand at the summit of the hill and overlook this Poland-China village, and see the big-type Polands as they are making their feed into money for their master, is an interesting sight.

While at Ames, he coached the winning judging team of the International Livestock Show at Chicago in 1912, of the American Royal at Kansas City in 1913, and of the National Western Livestock Exposition at Denver in 1916.

Mr. Pew has judged beef cattle, hogs, and draft horses from Manitoba, Canada, to Fort Worth, Texas, and from Springfield, Massachusetts, to San Francisco, California. His decision is never disputed, and showmen are glad to show under him, because they are sure of an unbiased decision.

THE EDITOR.

I asked Mr. Pew why he had chosen the Poland-China breed. He answered that it was not because they were better than some of the other breeds, but because they were just as good and suited his fancy better. Also, was it not in Ohio that this breed originated? He started his herd by selecting sixteen sows and two boars from two prize-winning herds in Nebraska. He bought two lines of breeding, and mated the boars of one line with the sows of the other. His gilts by the first boar he then mated with the other. He intends to do some line-breeding, but not much

From the appearance of these porkers, we don't need to be told twice that Mr. Pew knows how to grow hogs. The man with the basket is Mr. Pew himself

in-breeding. He kept all the good gilts from his first crop of pigs. He was offered a fabulous price for some of them, but he said he could not replace them for the same money, and so he did not let them go. He kept his two best boar pigs, and castrated some of the poorer ones for his home pork and gave each hired man one for his own use. He used the knife on four of his best boars, and now has a pen of barrows any three of which, he thinks, will give someone a run for their money at the International next year.

"I am raising market hogs, and I want to show in that class as well as in the breeding classes. We do not want to overlook that class, or we breeders would all be put out of business," was his sage advice.

He sold a few of his good boars just to get a little advertising. He believes a man should advertise his herd by the individuals which go out from the herd. He has spent some of these living advertisements as far west as California. An engine grinds and mixes his feed, all of which consists principally of home-grown corn, oats, and barley. He buys tankage and salt, which he keeps before them all the time. His pigs have a constant supply of pure water, warm in winter and cold in summer. Its a lucky pig that finds a home at Ravendale Stock Farm. Last year the litters averaged 8.75, and the sows were all gilts.

THE farm of J. O. Pew and Son is known as Ravendale Stock Farm, and is situated in northeastern Ohio. There is a population of three million people within a radius of 75 miles. I asked Mr. Pew why he went to Ohio to buy a farm.

"There are a great many things one can do with \$100-an-acre land," he replied, "that he cannot afford to do with \$400-an-acre land, and one can have more of it. There is a great opportunity in this Western Reserve. Land is comparatively cheap, and it is in the center of good markets. It has been overlooked, but it is coming into its own."

"I am still learning, and expect to be learning new things as long as I farm. The science is new. None of us know enough about it. Agricultural teaching and experiment-station work is a very honorable, desirable, and interesting profession, but it is doubly interesting to run a farm, because you have something invested and something at stake. I now study as much as I did when I was teaching. I wouldn't advise every experiment-station and agricultural worker to leave his work and start farming for himself. We need them where they are. I believe, however, that every agricultural worker should manage a piece of land. Then he would have his feet on the ground. He could try out new ideas; he would have things first-hand. For illustration, there is Dean Carter of Iowa and Professor Munford of Illinois, both of whom manage their farms and by their contact with the soil perform their duties better, and their institutions are bettered thereby. Agricultural institutions should encourage their faculties to get their theories first-hand."

Pew sold from his farm last year 120 tons of mixed hay at \$36 and \$38 per ton, and carried 40 tons over the summer. Now he has 160 tons of straw in the barn, and three large stacks besides; also 300 tons of hay in the mow. Under his present system of crop rotation and farm management his land is becoming richer each year.

"No; it is not difficult to get help," he said in answer to [CONTINUED ON PAGE 32]



Humpy Squirrel's Christmas Tree

Mrs. Screech Owl got the spirit of the glad times a little late, but she got it

By Frank A. Secord

Illustrations by Edwina Dumm

AS THE last tint of red faded in the sky, and the moon peeked over the edge of the bleak meadow that stretched beyond the woods where Mr. and Mrs. Chickadee lived, they trilled a few notes, first to the day that was all but gone, and then to the night that was coming. A little way beyond the home of the chickadees, Mrs. Screech Owl sat humped up on a limb of a tree, sending through the woods a harsh, scolding cry that seemed to tell of a grouch. Old Man Wind rattled the gray bare branches of the trees and, as he did so, sang in a low voice his one song: "Oo-oo-oo!"

When the chickadees ceased their trills, Mrs. Screech Owl made a wry face and, with the snow below for an audience, remarked, because her own song was harsh, "I hate those little hop-o'-my-thumbs!" then winged her way through shadowy places and was attracted to a sign. Pausing and balancing herself on her wings, she read:

CHRISTMAS TREE AT HUMPY'S TO-NIGHT

As Mrs. Screech Owl read, Old Man Wind busily swept the snow off the ice of the river, and an old crow and an old owl flitted above, announcing that when a light appeared at Humpy's window it would be the signal for all woodland folk to come to the Christmas Eve fun.

Humpy was a little squirrel who lived in a hollow tree, and was crippled—hence the name—so Mrs. Chipmunk kept house for him. Humpy never did anything much, folks said; but for a long time prior to this the little fellow shut himself up in a room of his home, where he hammered and sawed,

puffed, and grunted at a task that nobody knew anything about, save Mrs. Chipmunk. He made up his mind that he would astonish everybody at the tree with what he had to give them.

Mrs. Screech Owl listened to the crow and the owl crying the invitation to Humpy's, and she growled to the two birds that it was well enough for chickadees, who are no good to the world, but that Christmas meant nothing to a screech owl.

"I shall not be there!" she said.

AS DARKNESS came, a coon rapped at the door of Humpy's home. He was covered with snow, and dragged behind him, puffing as he walked, a large branch of an evergreen tree.

"I am glad that I have to do this but once a year!" Mr. Coon cheerily cried when the door was opened to him. "It is no joke, folks, to find a tree like this and drag it through the woods, I tell you!"

"It is very kind of you to help," declared Mrs. Chipmunk, as Mr. Coon bowed himself out to wait for the signal. He ran about to keep himself warm, and chanced to pass beneath the tree where Mrs. Screech Owl lived, and gayly shouted:

"I hope I'll see you at Humpy's, Mrs. Screech Owl!"

"I hope you will not!" the answer came quickly enough.

"Funny old bird, that," thought the coon. "I'll take a chance to-night, but it appears she won't."

Mr. Coon trotted on, and as he did so stumbled over a huddled form under a bunch of dry grass. The object hopped nimbly to one side and growled. Mr. Coon looked at it, but could not make out who or what it was, for the object was bent upon keeping hidden. "Whoever you are," cried the coon, "Merry Christmas to you! But I don't believe you will have a very merry one out here in the snow."

There was no answer, and the coon couldn't help wondering what it was that he stumbled over, and later, when the signal appeared at Humpy's window, he ran as fast as his legs would carry him, to the door. In his eagerness to get inside he bumped into something that surprised him, for

the something was strangely like the object under the bunch of grass. He had a suspicion that all was not well, for the stranger ran on into Humpy's house and disappeared.

The coon could not understand why Mrs. Chipmunk, smiling, seemed to care little about the wild-looking thing. She turned to her duties of hostess, with no concern at all.

"That thing—where did it go?" inquired the coon, peering about the room, and as he spoke there was a rustling of a grass curtain that hid from view the tree, and Mr. Coon was about to run away, when Humpy scowled upon him, and then laughingly exclaimed:

"Don't be foolish, Mr. Coon! Remember, you know little about Christmas. Be calm—wait!"

"I will be calm, but I won't promise to wait if that thing shows up again!" muttered the other, walking over to a seat near the door.

MANY arrived at Humpy's for the tree; but ever, when the door opened, was heard the harsh, shrill cry of Mrs. Screech Owl, who seemed bent upon destroying the quiet of the evening outside. Mrs. Screech Owl finally paused at a tree close to Humpy's home, and as she did so she was spied by Mrs. Chipmunk, as the latter opened the door to admit Mr. Badger, one of the very last to arrive. He explained that he would have come earlier, only that he saw an awful-looking thing prowling near the house some time before, and he was a little afraid to show himself.

Mrs. Chipmunk seemed in no way interested in the badger's explanation, but called cheerily to Mrs. Screech Owl, "Come in!"

"I prefer to stay out!" snapped the other.

"Everybody will be here!" Mrs. Chipmunk ventured, holding the door open a little way.

"Everybody!" Mrs. Screech Owl mocked. "I am somebody, and I shall not be there!"

However, after sitting out in the cold and observing that even a pair of crows came, the screech owl walked up to the door and knocked. When Mrs. Chipmunk opened, she said:

"I shall stay but a few moments. Excuse me, please!" and strutted into the room, arriving in front of Mr. and Mrs. Crow.



Mrs. Screech Owl went—oh, yes; and she went fast—for a time

"Your feathers are fine!" Mrs. Crow observed, smiling upon the new arrival, who sourly answered that she always presented a fine appearance, and that she would match her feathers against those of any bird—winter or summer—that ever flew; whereupon Mrs. Crow turned her head and pretended not to hear.

Humpy walked about the house and, with a paw, counted noses and beaks, remarking that Mr. and Mrs. Chickadee were not there.

"And that frisky rabbit, who lives in the log down near the spring, is not here!" Mr. Coon cried, also looking the crowd over.

"I wish they'd have the tree and not wait!" a sparrow whispered to one of her kind, and Mrs. Screech Owl, hearing this, grunted that she thought as much. "I hate chickadees!" she added, shaking her wings and looking around to see if anybody admired her plumage.

HUMPY sat down, and everybody, turning toward the curtain, wondered when something would start. Mrs. Chipmunk wiped the tip of her nose with the corner of her apron.

"What's behind the curtain?" inquired an owl, trying his best to stare through the screen, when a rap at the door called Mrs. Chipmunk thither in a jiffy, and in walked Mr. and Mrs. Chickadee, followed by a stranger to those woods in winter, who limped and could hardly keep up. The stranger held trailing ends of a robe which Mrs. Chickadee wore, and which was made of red, yellow, and brown leaves of the sumac and the oak. Her entire body was entwined with bits of the inner bark of the elm, to which was fastened the leaves. On her head she jauntily wore half of an acorn shell. Mr. Chickadee was dressed in brown leaves, and for a hat he wore only his natural hood of feathers, to, no doubt, sharply contrast his own appearance with that of his wife.

Mrs. Screech Owl groaned with anger, for she prided herself upon being the handsomest bird of the winter woods—and now Mrs. Chickadee outshone her!

The stranger following the chickadees was a tailor bird who, having been hurt while trying to make his way south, months before, was befriended by the two little birds. To show his [CONTINUED ON PAGE 29]

In succession, shoes of various kinds for birds and animals were taken from the trees



How a Poor Man Built a Paying Herd of Purebreds in a Short Time

An unusual story of a Virginian and his Guernseys

By E. L. D. Seymour

THE story of Judge R. H. L. Chichester and his herd of Guernseys could be told with plenty of exclamation points, resounding adjectives, and other devices that would emphasize its remarkable features. That, I admit, is the way I expected to write it when I first heard of what the judge has done. But after I visited the drowsy little town of Fredericksburg, Virginia, and enjoyed a day of his delightful hospitality and saw his cattle and heard him tell what he has done with them, all idea of having to "play up" the story faded away.

"Why," thought I to myself, "the biggest feature of the whole thing is its simplicity and matter-of-factness. It simply can't help being interesting, because it is the tale of what an average man has done under the most ordinary conditions, and, therefore, what other men with gumption can do if they set their minds to it."

So here's the story without any trimmings. I could only put part of it in the judge's words, because, while he is always ready to talk about his cows, he doesn't take very readily to talking about himself:

Judge Chichester was born and raised on an eastern Virginia farm right near where he now lives—that is, when he isn't holding court somewhere in one of the five counties that make up the Fifteenth Judicial Circuit of the State. His present cattle-breeding activities don't trace back that far. They don't even go back twenty-seven years, to the time when there was devised to him by his mother, Glencairne Farm, which had been hers and, before that, his grandfather's. The acquisition of those 200 acres was a sort of groundwork, even though, for a number of years, he wasn't able to more than just keep going the farm and a small grade herd. I have an idea that his last three years with purebred cattle have brought him greater financial returns than his entire judicial career, which, year in and year out, keeps him away from home about twenty days out of every month.

SO WE will pass over those seventeen years of ordinary farming to the time, ten years ago, when the judge bought his foundation herd of purebred Guernseys. There were only ten of them—five cows and a bull calf from the farm of a neighbor named Wallace, two cows from New York State, and two more from Pennsylvania. They cost only \$825, or \$100 apiece for seven of the cows, \$50 apiece for the other two, and \$25 for the calf. That is pretty reasonable as cattle prices go to-day, but at the time it represented a very considerable investment. For two years he had to sail very close to the wind, not even attempting to buy a mature herd sire. As it happened, the nine foundation cows were all in calf to Dr. Wallace's bull, Redina's Pride, when he bought them.

But by 1912 he had decided that if he was going to accomplish anything he would have to put into operation a systematic breeding policy. So he sent up to Mr. V. Everitt Macy's, Chilmark Farm, Westchester County, New York, and for \$200 bought a six-months-old bull, King of Chilmark, of which neither he nor anyone else knew anything in particular, except that he was well bred and a good-looking youngster for his age.

Between 1912 and the present time Judge Chichester has made two other purchases. The first was that of a bull of the famous Masher's Galore family, named Aristocrat of Harbor Hill, for \$400; the second that of an imported cow, Rhoda des Blancs Bois (Rhoda of the White Forest), for \$500. That isn't so very much money to

spend for a start. In the whole ten years of his breeding operations, therefore, he has spent for cattle a total of \$1,925. What has he accomplished?

Well, among other things, he has increased his farm from 200 acres to 400; he has brought under cultivation a considerable acreage of scrubby land that he never before could afford to develop; he has built a \$7,000 cow barn; he has added a touring car to his auto equipment, which for several years consisted of one "flivver;" he has increased his herd from the original ten

This is Judge Chichester himself and William Conway of the wistful face and sunny disposition; also Little Star of Glencairne, a granddaughter of King of Chilmark, the very one, in fact, that jumped right to the head of her class upon completing an official Advanced Registry test as a senior two-year-old



head to about thirty, and its value from \$1925 to not less than \$300,000. He has sold, among other surplus animals, one bull calf for \$3,000, or \$1,100 more than he paid for all the cattle he ever bought, and a cow for \$4,000; he has refused more than \$11,000 for one of the cows now in the herd, and he has set the whole Guernsey world agog over the performances of the new family he has discovered, having put six cows among the class leaders of the breed within a little over a year. The majority of these results have been accomplished since the beginning of 1919.

That is the experience upon which Judge Chichester bases his belief that "with industry and good judgment any man can raise and develop a profitable herd of cattle in a few years; for, aside from the inherent merit of the cattle I have owned, and the success of the breeding combinations I have hit upon, no factor has entered into my results that is not within the reach of any progressive farmer breeder of average skill and intelligence."

There has never been anything elaborate about the methods on Glencairne Farm. Until the new barn was completed in 1919, an old red, horse-cow-hay-and-implement barn has sheltered all the herd except when, during a part of each year, the young and dry cows have run over the wooded pasture land. Until Advanced Registry work was taken up, only ordinary farm feeds were used. In place of expert, college-trained, scientific management, there has been simply a combination of Judge Chichester's determination, good judgment,

and energy, and the devotion, sincere interest, and inborn ability of his dusky, one-legged herdsman, William Conway.

That same William, of the alert, rather wistful face and sunny disposition, does as much milking, feeding, and keeping the cows in condition with his one leg and active crutch as many a herdsman could do with a third leg in addition to his regulation two.

"Aside from good breeding," the judge told me, "my idea is that William's care has been one of the main reasons for our

that the other six cows and their progeny didn't "come up to specifications" he got rid of them.

The three cows that made good founded what the judge calls the "three R families"—the ragged, the rugged, and the refined. There was Ina Prairie Belle, who headed a line of what he called "ragged" type animals, though their performances have more than made up for their rough looks. Then there was Pocahontas of Ellerslie, whose progeny have traits of ruggedness sticking out all over them. And finally there was

Dorothy of New Castle, who stamped her descendants with exceptional refinement. All three strains have proved splendid milkers.

On the other side, and representing, as the old saying goes, "at least half the herd," are the three bulls that are responsible for Glencairne's success—Duke of Glencairne, the \$25 calf; Dr. Wallace's Redina's Pride; and King of Chilmark. The greatest by far of these three is King, but the others have contributed daughters which, bred to him, are adding to the list of descendants that have won him fame.

For six years King of Chilmark dwelt at Glencairne. By the end of that time some of his daughters were good enough to warrant starting one or two on official tests. But before any of these tests were finished Judge Chichester decided that, in order to avoid inbreeding, he would have to use another sire. As neither his herd nor his capital was large enough to justify keeping two, he sold King of Chilmark to F. K. Babson of Chicago—at a profit over his purchase price, but cheaply enough at any price, as soon became evident; for

the very first of his daughters—Sanoma's Archer Girl—to complete a year's test, immediately found herself among the class leaders of the Advanced Register, having made more than 13,250 pounds of milk and 692 pounds of butterfat as a three-year-old.

IN RAPID succession four more of King's daughters—Ina's Grace, Wallie's Queen, of Glencairne, Lady du Chene, and Minnehaha's Papoose—entered the ranks of the leaders, averaging in age three and a half years, in production 13,088 pounds of milk and 708.49 pounds of butterfat. Of these, perhaps the most remarkable is Minnehaha's Papoose, a granddaughter of Pocahontas, who, twice bred by mistake, when a bull (Aristocrat of Harbor Hill) jumped a pasture fence, produced \$4,700 worth of bull calves, and in addition made a record that won her the title of world's champion yearling cow of all breeds.

"This record," say the highest Guernsey authorities, "far exceeds the record of any other Guernsey bull."

Almost overnight, Judge Chichester found his herd the focus of a whirlwind of excited interest and frantic desire to purchase animals carrying the blood of King of Chilmark.

The way the value of these animals jumped was almost ludicrous. One of King's daughters, Graceful Miss by name, had been sold as a calf by Judge Chichester to a neighboring farmer for \$100. He in turn had passed her on after a few months for \$200, a natural, moderate increase, due to her improved appearance. This owner, getting into difficulties, had to sell his stock, and in doing so realized \$300 for her. But then—! Last spring, after the bombshell outlined above had been exploded, Chilmark Farm, King's original home, bought Graceful Miss for \$3,500!

Sanoma's Archer [CONTINUED ON PAGE 19]

REFERRING to Judge Chichester's capable one-legged herdsman, William Conway, the "Guernsey Breeders' Journal" recently said that his results "demonstrated what may be accomplished by one who, without previous experience, conscientiously attends to and is interested in his work."

lieve, spends as many nights in the barn with them as he spends in his own cottage.

That record is worth the attention of ambitious young herdsman, for, as the "Guernsey Breeders' Journal" recently said, his results "demonstrate what may be accomplished by one who, without previous experience, conscientiously attends to and is interested in his work."

Suppose we now study the activities of Glencairne Farm for those six productive years to discover the reasons for Judge Chichester's success: In the first place, all the animals of his own breeding now in his herd (which excepts only one cow and two bulls) trace back to three of the nine foundation cows. Although he did no official testing until about 1918, the judge was a consistent user of milk scales and the Babcock test from the very first, and finding

Grace Margaret Gould Says:

Let your frock and your face show the Christmas spirit!



OF COURSE, you want to look smart in your clothes. Every woman does. Well, just remember that smart dressing is more a matter of care and style knowledge than of good luck. In every case good taste is the best dressmaker. Get the habit of being well dressed. Give your clothes careful thought, and never slight the smallest detail.

At this season of the year it is the new little touch that counts the most in style. There is nothing especially new in the one-piece dress, the moyen-âge gown, the apron frock, the long-coated tailored suit, or the wrappy coat. But there is something new in the trimming, in the color combination, and the fascinating accessories. For instance, be sure to get away from the straight conventional hem in at least one of the gowns you own. An imported one-piece evening dress, a mass of shimmery spangles, has the bottom of the skirt cut in points. Where looped panels of chiffon add to the softness of a satin dress, they hang longer than the skirt, giving the uneven hem effect. And it is the same way with the lovely sashes of tulle or silky crepe—their ends hang longer than the skirt.

Sashes, by the way, are very much the vogue. And quite frequently two sashes instead of one are worn with a frock, each one being tied at the side.

Embroideries are the height of fashion, and it is in their coloring and the way they are placed that they give the new look to a costume. One-piece dresses of tricotine or soft serge often have a deep girdle of the self-material. This girdle will show a touch of conspicuous embroidery, and that will be the only trimming of the dress. For instance, a dress of henna serge has three nasturtiums, with their green leaves, embroidered at the right side of the

girdle. The long ends which tie at the left side are finished with worsted fringe in the natural shade of the nasturtiums.

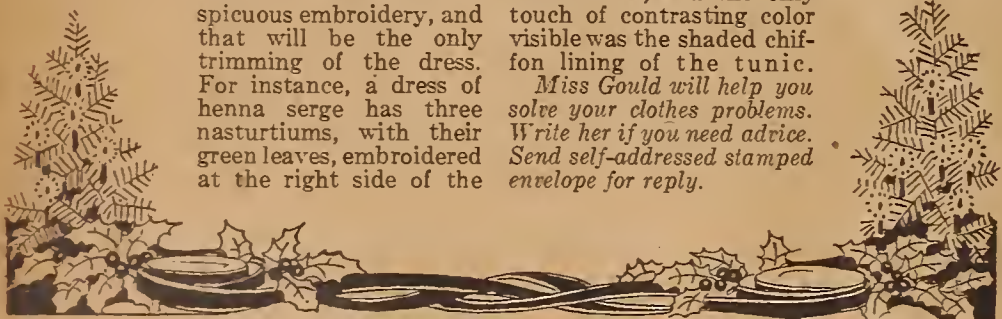
Wool embroidery is smarter just now than silk. Coarse effects are liked.

Here's a little suggestion for changing the effect of a tunic dress: Perhaps you have had a cloth dress with side panels or tunics of satin or the self-material. Just rip them off and put in their place streamers of flat silk braid. Have each streamer about two inches wide, and finish them toward the bottom with a diamond-shaped piece of solid wool embroidery. Chinese blue would be a good color to use, tangerine-yellow, brick-red, squirrel-gray, purple, or paddock-green.

Color contrasts properly chosen play an important part in smart dressing. If you have an evening dress of coral satin, you can give it a French look by fastening at the corsage a big black velvet rose. If you have one of the coat dresses that are so fashionable now, and are going to be even more fashionable in the early spring, make a girdle of narrow strips of fur, should you want to change its effect. A squirrel girdle of this sort, having each little narrow, belt-like strip finished with a steel buckle, would look well on a navy tricotine or veldyne dress.

Fashion just now is favoring crepe de chine. And if there ever was a material that's serviceable, it is this, especially the new crepe de chine which is so durable and heavily woven. A crepe de chine that I saw recently was taupe-gray embroidered in gray and dull silver beads. The dress was made with a tunic slit at the sides, and the only touch of contrasting color visible was the shaded chiffon lining of the tunic.

Miss Gould will help you solve your clothes problems. Write her if you need advice. Send self-addressed stamped envelope for reply.



Christmas Looks

REFLECT the Christmas spirit in your looks. Please do! You'll be so much happier yourself, and so will every member of the family. You can't be really Christmasy if you have a drawn expression and a cracked smile. They don't match Yuletide festivities. Your happiness must be unaffected, not in any way forced.

If you have been neglecting yourself, I know you want to hear of some short cuts for improving your appearance.

Is your face rough and red? If so, try olive oil—not internally, but externally—and see what happens. Here's a quick treatment which will make your skin soft and whiter: Before going to bed massage your face with a cleansing cream, one that will really search out and dislodge the dirt that has settled in the pores. You can get one like this. Rub it in well, let it stay on for a few minutes, and then wipe off with a soft cloth. After this, pat the face with olive oil or any good vegetable oil. Don't rub—just pat. Let the oil sink into the skin and remain on all night. In the morning wash the face, first with warm water and then with cold.

If your face is sallow and looks drawn and wan, with here and there a horrid little brown spot, don't despair. There is a skin tonic and a wonderful cream for you. They

will give a look of freshness to your face, at least for the evening through. Both tonic and cream are a lovely pink in color, and have a refreshing fragrance. Wash the face first with the tonic, just as if it were water. Then, while the skin is still moist, apply just a little of the cream. Finish with a touch of powder. Though this is a quick remedy for banishing that tired look, it is also an excellent treatment for clearing the skin if used regularly twice a week.

If you have an unruly eyebrow, look out that it doesn't spoil your whole expression. Do train it so you'll look your best at the Christmas dinner. Just brushing will help along the good work. And you can get the cutest brushes, just for eyebrow use. First pull out the straggling hairs. Make the line of your eyebrows neat and defined. Don't use your fingers—use tweezers. Then, for a night or two, rub a little vaseline over the eyebrows. Do it with the tip of the finger and press rather hard. Let the vaseline remain on all night. Try vaseline in your eyelashes too.

If your cheeks are too pale, don't put rouge on your face. You can get a pretty pink color, and one that will look natural too, by quickly patting into your cheeks a good skin-toning lotion. One of concrete benzoin will prove stimulating to the pores of the skin, and is safe to use.



If you are bothered to death with the down on your face unpleasantly showing, try a bleaching cream. There is one that will not only clear up your skin, but will also bleach the down and superfluous hairs so that they will become invisible. Of course, this can't be accomplished overnight. It will take time and patience.

If your face flushes quickly, especially when you are hurrying to get dinner, here's a bit of good news. There's a powder made for such conditions. Don't hold your hands up in horror when I tell you that it's green—but just the palest shade, and it's extraordinary how it tones down a flushed face.

Inquiries promptly answered



Stylish Economy

FOR the brilliant color note, and for real warmth, try one of the latest wool scarfs. They make a fascinating substitute for the furs that not all of us can buy this year, because of their high price.

The scarfs are wide and soft, and come in the loveliest of color combinations. They are made of angora, camel's hair, and brushed wool, and the new idea is to have a hat to match. The scarf with matching tam-o'-shanter is no novelty, but the scarf with a real hat, in a becoming shape, is counted among the new things of the winter season.

Some of the hats have straight brims, others are in rolling brim shape. Frequently the brim will be one color and the crown another. Brilliant purple and squirrel-gray are used together, as well as royal blue and tan and black and white-checked angora combined with green, orange, or bright red.

The hats are not hard to make if you have a knack that way. The best looking are made over a small buckram frame, that has a soft net top to the crown. For trimming, wool cords and tassels are used, also fluffy wool pompons and gay wool flowers.

This Month— A Lounging Robe

BECAUSE it's Christmas the pattern of the month will help out the what-to-give problem. She would be a hard woman to please who wouldn't like a comfortable, warm lounging robe for a Christmas gift. The one shown in the illustration is so attractive, especially if it is made of French blue corduroy and blanket-stitched with yellow wool. It has a large rolling collar extending into revers in the front. The sleeves are kimono in style, and the novelty of this "comfy robe" is that the lower part of the garment laps over the upper, forming a big pocket at each side.

When you buy the pattern of this robe, you'll find also patterns for the boudoir cap and the slippers, making a complete lounging set.

The cap is quite nice enough as a Christmas gift all by itself. It is made of lovely soft taffeta in a golden yellow shade, with a dear little frill of creamy lace to rest on the hair and the forehead. At the back it drapes into graceful folds, and then the ends tie in a dashing bow.

The slippers match the robe. They are of the French blue corduroy blanket-stitched in yellow wool. A fluffy pompon of the wool is fastened to the slipper in front.

When puzzling over your Christmas list, don't forget this quick-to-make set of patterns. No. FF-3981—Set consisting of Lounging Robe, Boudoir Cap, and Slippers. Sizes, 36 to 42 bust. Price of pattern, twenty cents.

One reason why you can make up the lounging robe so quickly is that with the pattern you receive two charts—one to identify the pieces, and the other showing how to lay the pattern on the material. You will also find explicit directions for working the blanket stitch.

Send order to Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City, or Pattern Department, Farm and Fireside, Springfield, Ohio.



No. FF-3981



Your Child's Health Depends on the Kind of Home You Give It

By William R. P. Emerson, M. D.

THERE is no royal road to health. These articles give you the essential points of a health program, but it depends upon you to carry it through, and your success will be in proportion to the degree of coöperation between you and your children.

Malnutrition can often be traced to faulty home conditions, and in all cases the home atmosphere is an important factor in successful treatment. Have you ever stopped to think what is the prevailing atmosphere of your home? Is it positive or negative, a home of hope and stimulation, or one of repression and fear? Does its tone indicate hurry, injustice, worry, deception, or the opposite of these undesirable qualities?

Do your children hear habitually, "Don't do this!" and "Don't do that!" or, "That's a good idea, try it out, and see how it works." Good government in the home makes for happiness and health, as it does in the State, and the principle of self-government will bring about surprising results in the matter of health, once the child's interest is aroused and his attention directed to the subject intelligently.

There is much in the Boy Scout slogan, "Be a man!" Children are natural hero worshipers, and the desire to be a good athlete, or to excel in games or other accomplishments admired in others, will make many a boy and girl willingly accept self-discipline that could not easily be imposed on them by others.

Convince a child that a certain program is worth-while, and he will carry it out. A little girl who learned the importance of fresh air compelled her unwilling mother to open the bedroom windows. A small boy appeared regularly with his blanket to ask his careless mother, "Isn't it time for me to lie down?" Another gave up tea and coffee, and taught himself to like foods to which he had previously had an aversion.

Not long ago a girl came to one of our nutrition clinics, after an absence of thirteen months, to claim the certificate which we give to children who come up to normal weight for their height. She had been working by herself all that time on the instructions given her, and had succeeded in making a gain of 15 pounds, which brought her "over the top." A boy who met with some difficulties at home in carrying out his program said, "I'll graduate or bust!"

THE physical examination recommended in the first article of this series offers an excellent opportunity for taking stock of your children's condition mentally, and morally as well. If the child sees that both parents are really interested in this examination and in the weekly weighings that follow, he will respond with an unusual degree of confidence.

There is nothing of greater importance to a child than to feel that he is understood. The wise mother knows when a child is over-taxed, and makes proper allowance for him. She realizes that his character changes under stress, and says, truly, "He isn't himself." She studies to recognize the occasions on which this is a valid excuse, and tries to find the cause and remove it.

Home conditions affect all children, but they are of special significance in the lives of the malnourished, who are less able than well children to resist the effects of bad conditions. A frequent cause of malnutrition is found in the child's feeling that he has been unjustly treated. The fact that he may be mistaken makes the result no less serious. We recently had a case in which a little girl failed to make progress under apparently favorable conditions. It was found she was suffering from what she considered an injustice. As soon as an understanding was reached about the point, she began at once to gain.

It is important to find out what the child really cares for and fears. In many instances some little matter is causing him distress, and is preventing him from coming

up to his physical possibilities. One child on the East Side of New York had an unreasonable fear that a cat would come into his room at night. A screen placed in the window made sound, untroubled sleep possible for him. Another child did not wish his window open, and after some time it was found that he was afraid of burglars. A plan was made, in which he had a part, to fasten the window with a screw which

worry is often serious, and the air of mystery and secrecy with which adults usually treat the subject only makes a bad matter worse.

It may be comforting to parents to know that in a most careful investigation which we have made recently we have not found a single instance in which bad sex habits had caused malnutrition. Among children of low mentality, the presence of these

begins to show itself when his actual accomplishment amounts to little, but his attempts should be encouraged. His failure to help later when his work would be worth more may be due to the fact that the earlier impulse has not been turned into habit.

Apart from the value of the service, we should remember the importance to him of having a constructive and responsible attitude toward life. How many parents, instead of giving the child needed instruction, will say, "I'd rather do it myself than be bothered with him!"

Self-reliance and readiness to coöperate furnish the best basis of health and happiness. Children are naturally self-centered, and need to be trained to see their own interest in relation to others. The "spoiled child" is a nuisance to himself and to all his associates.

IT IS astonishing how many children we find suffering from the effects of overindulgence. There is nothing more tragic than the home in which a child has "got the upper hand." This does not mean that he should be repressed, for one of the greatest opportunities a parent has is to aid a child to come gradually from helpless dependence on others to independent, coöperative action. He should be helped to take the responsibilities that belong to him, without, on the other hand, having cares put upon him before he is ready for them.

Among the poor, especially, we find many children who are kept from normal growth by worry over such matters as the payment of rent, the care of younger children, the fear of the father's losing his job. But even in the homes of the well-to-do we have known many instances in which children have come to know too much about the worries and difficulties oppressing their parents.

There are many tendencies in a child which appear quite naturally at a certain age, and would soon disappear if properly met and handled. It is often our unfortunate way of indulging or repressing them which makes them seem sufficiently useful to the child, so that he persists in them, and is saddled for life with some unfortunate or disagreeable habit. Displays of temper, even to the point of "tantrums," are usually practiced because they have proved a successful means of getting what the child wants. There is the story of the little girl who was crying lustily for a second piece of cake. Her father said sternly, "Do you know what will happen to you if you keep on making that noise?" "Yes," replied his little daughter, "I'll get another piece of cake."

Much progress has been made in the resources that make for health, but there are still enough battles to be fought in making it more natural to be well than to be ill. Malnourished children are especially susceptible to suggestions, and fears once impressed are almost impossible to eradicate. Therefore do not allow any mention of definite disease, such as "heart trouble," tuberculosis, and so forth, to be made in their presence.

UNSCONSCIOUS suggestion often leads to surprising results. The ten-year-old son of a friend recently began to lose weight. Careful inquiry failed for some time to bring any cause to light. When the mother finally insisted upon an explanation, she found the boy's teacher had chanced to say, "A fat person does not make a good athlete." The boy had immediately reduced the amount of food he was taking. Further investigation showed that several of his mates had joined in this dieting with equally bad results.

It was no easy matter to convince them that they were in no danger of an obesity which would bar them from success in sports. The mother made an agreement with her boy under which she would pay him a dollar a pound for his gains, but she was wise enough to include also a promise from him that he [CONTINUED ON PAGE 16]



NUTRITION CLASS

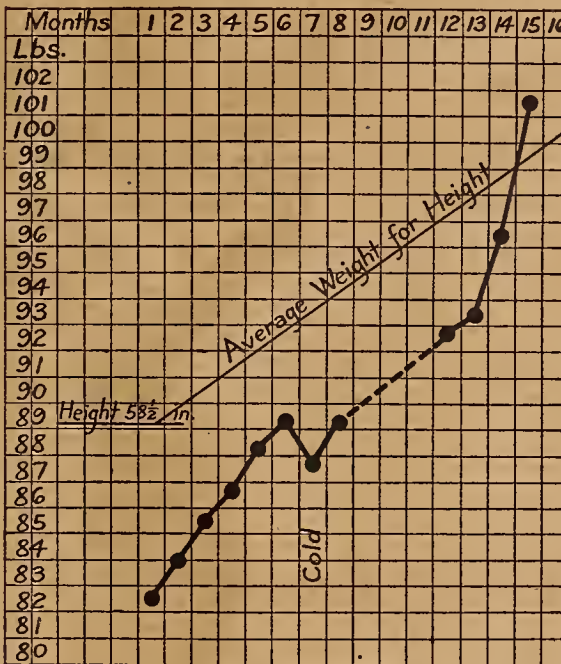
THIS IS TO CERTIFY THAT

Charles Chase

HAS ATTAINED THE REQUIRED STANDARD OF HEALTH AND WEIGHT OF One hundred POUNDS

SIGNED W. R. P. Emerson, M. D.

DATE January 31st 1920



Charles C., whose chart and photograph are shown above, reached the required standard of health and weight by his own efforts. He came alone to the nutrition clinic regularly, until his normal weight was attained. He had the help of his school, which excused him at eleven for lunch and a rest period, but he kept his school work up. He is an excellent example of the value of the child's own interest

would prevent its being opened more than a certain number of inches. His fears disappeared at once.

Many mothers are much concerned about the effect upon the children's health of bad sex habits. This is naturally a matter about which it is not difficult to have misunderstanding. A feeling of delicacy and reticence often leads to suspicions which cause one to read into some simple statement or act much more than belongs to it. It is easy to look at these matters from an excessively moral standpoint, and to fail to see the normal physical and mental aspects which may need attention. Boys and girls are, on the whole, a level-headed lot, and they usually look at such questions in a healthy way.

WITH a little child these tendencies should be met in the same manner one would deal with biting finger nails or sucking thumbs. It may require some simple punishment to correct the habit, but the child should not be led to focus his attention upon what he is doing.

An older child suffers more from the effects of worry about what he fears may be wrong than from any other cause. This

habits is an effect of their mental condition, and is rarely, if ever, the cause.

Much of the self-indulgence which wastes a child's life grows out of the self-indulgence of older people. The mother who lets her child "have his own way" is often gratifying her own pleasure. By making a pet of him she seeks to make him dependent solely on her for his happiness and pleasure. She encourages him to come to her with little ailments and symptoms instead of teaching him to meet small hurts and disappointments without crying.

Mothers still expose their children to measles, whooping cough, and other infections with an Oriental fatalism, saying, "They are bound to have it anyway, and it may come at a more inconvenient time." The start down-hill of many a child who has been in excellent condition in infancy was made in an attack of one of these children's diseases.

The thought that even little children can do something helpful for other members of the family will do away with many tendencies toward selfishness. The child should be helped to the expression of his normal feeling by directing his activity into useful avenues. His desire to be useful and to help

Could You Do What Handy Did With 275 Hens?

By Ross M. Sherwood

A NUMBER of Kansas farmers have been making from \$500 to \$1,000 a year from poultry, without neglecting their other crops, and when drought cuts the crop yields short they know that the hens will keep the wolf from the door and tide them over, without going to the banks for aid. There are plenty of farmers who do not pay much attention to their poultry, and really do not know what the cost is. One of these was Jones, but now he has learned how, and has set about doing it with a will. Maybe you would have a bigger bank account too if you gave a little more thought to your poultry.

Adams, president of the Linn National Bank, Franklin County, Kansas, was standing near the front window of his bank talking to Jones, a wheat farmer, as Handy carried a case of eggs past the bank and into a neighboring grocery store. They noticed Handy, and the conversation turned to poultry-raising. Jones was of the opinion that hens "ate their heads off," while the banker was convinced there was good profit in poultry properly handled. The discussion continued until Handy entered the bank to deposit the egg money which was left after purchasing a good supply of groceries and dry goods, so they asked Handy what he thought of poultry as a farm side line. Handy was surprised that Jones thought he had been keeping chickens at a loss, and went on to say that

he had been keeping accurate records for a number of years, and that he had made a profit every year. During the last year he had kept records on blanks furnished by the Kansas Agricultural College.

He had recently figured up his profits for 1918, and produced a statement showing his results for that year. The first item showed that 30,214 eggs had been gathered. This figure was rather startling, and Jones remarked that Handy must have had 500 or 600 hens in order to get so many eggs. He was informed that on January 1, 1918, the flock consisted of 275 hens and pullets. During the season a few of these hens died, and over 100 were sold, so that in November only 135 of the original flock remained. Enough pullets were raised during 1918 so that on January 1, 1919, there were 304 hens and pullets, or 29 more than he started with. By figuring the average production of all hens on hand each month it was found that they averaged 140 eggs per hen for the year.

Handy then produced this statement:

JANUARY 1, 1918, TO JANUARY 1, 1919.			
Receipts	Number	Value	
Eggs sold.....	27,374	\$776.70	

THE greatest of faults, I should say, is to be conscious of none.

CARLYLE.

Eggs consumed at home	1,993	57.04
Eggs set (for increase of flock).....	847	
Poultry sold.....		157.89
Poultry consumed at home.....		35.31
Increase in stock.....		23.06
Total income.....		\$1,050.00
Expense		
Feed.....	\$502.24	
Interest and Depreciation	46.00	
Total expense.....		548.24
Surplus or labor income.....		\$501.76

"You must remember," said Handy, "that I have charged all the feed consumed, as they were not allowed to help themselves either in bins or in the feed lots."

Adams then asked about the other crops, and was informed that the poultry did not take a large amount of time, and that Handy had harvested a good crop of wheat during the year. His corn crop had been a complete failure because of hot, dry weather.

"There are several farmers who deal with this bank," said Adams, "who had no wheat, and who had so little poultry that they had to borrow money for running expenses because of their corn failure. It sure is a good policy to keep poultry in

order to make the running expenses of the farm, whether the grain crops are good or not."

"Do you know of others who are keeping records with their flocks?" asked Jones. "Yes, Father has done as well as I have, and I know of three other farmers in this county, who have kept records, that have made \$300 to \$800 on their flocks. I know of a flock of about 1,000 hens in Washington County which made a profit of nearly \$1,500. Another smaller flock in the same county made almost as good profits as mine did. These are only a few that I happen to know of."

Handy then told in a few words just how his poultry is handled. The first thing he mentioned was that he had purebred poultry from high laying strains. Good winter quarters are provided, including a house with good ventilation, so that fowls will not contract colds and roup, and with plenty of room for the hens to scratch during bad weather. This house is 14 feet wide, with a platform or dropping board about 2½ or 3 feet above the floor in the back part of this house. The roosts are 6 to 8 inches above this dropping board. Thus the entire floor is clean for the fowls to scratch. This type of house is cheaper than to construct one with separate rooms for roosting and scratching.

Handy considers proper feeding as important with [CONTINUED ON PAGE 21]

Your Child's Health Depends on the Kind of Home You Give It

[CONTINUED FROM PAGE 15]

would pay her at the same rate for further losses. As a result the effect of the unfortunate suggestion was quickly overcome.

Perhaps the most powerful influence in a child's life is the approval of his associates. He is quick to detect what is considered "good form" in the group to which he belongs, or wishes to belong. The spirit of competition makes a strong appeal, and a boy will spur himself on to achieve what others of his group have accomplished. This is one of the great advantages of association in our nutrition classes. The children ask each other eagerly how much they have gained, and one boy whose interest in his health had been hard to arouse at home, when brought to one of our classes, at once said he wasn't going to let those other fellows get ahead of him.

But even when the child is alone he has his own normal weight standard with which to compete. For this reason the weekly weighing should be made something of a ceremony. The father, as well as the mother, should show an interest in the child's progress, and the health program through the week should be made easier by being tied up with the record of the weight chart.

Counter-suggestion is much more effective than repression. One should never forget that punishment is always an individual problem. A little study of a child's nature will show how to be just and fair to him. Only on that basis can one retain the child's respect and affection. After all, nothing is better than to make it easier for him to do what is best than to "have his own way" and do himself harm.

Wrong methods of punishment are frequently the cause of malnutrition. In ideal homes there is a healthy, normal attitude which seems to keep a child away from acts that call for punishment. When the need

does come, it is met in a constructive spirit, with no evidence of retribution or bad temper.

One of the most serious cruelties practiced upon a child is withholding an expected punishment until the following day. Punishment should be prompt, but if there is any reason for doubt never sacrifice justice to promptness. To punish justly one must know what the reactions of the child will be. Unfortunately, much punishment is given as a matter of form, with little more than superficial results. It is well to keep to well-tried and safe methods, but many mothers show a singular lack of imagination when confronted by a situation requiring discipline.

Physical punishment is rarely necessary, and should be used experimentally, and as a last resort. When it is really needed, and is well used, it may prove very effective.

The practice of sending a child to bed without supper is inexcusable, and is particularly unfortunate in the case of the malnourished child. On the other hand, taking away privileges has many advantages. One very sensible mother requires her boy to go to bed at an earlier hour than usual when he needs discipline. Especially good conduct may be recognized by reducing the early-to-bed sentence, but she is careful not to allow it to be wholly removed.

In the complicated conditions of modern life parenthood is more than ever an art calling for great skill and judgment. Where

bad control has existed for some time, it is sometimes necessary to separate a mother and child for a short period. We have had many cases in which children failed to gain, or continued to lose, while under the care of the mother, and began at once to climb

to the normal weight line as soon as an aunt or cousin or grandmother took them in charge.

One mother brought her little boy from a distant State to see me. He had developed such a temper that he would actually attack his mother with fists and use bad language if she dared to displease him. It did not seem possible that a child of normal mentality would conduct himself so badly, but a mental examination showed that he had no deficiency, and when he was placed in a special school, where he was taught to obey, his abnormalities all disappeared.

The principles on which stock and crops have been so wonderfully developed are now carrying over into the organization of the farm home, the rural school, and other social units. One has only to read some of the letters in FARM AND FIRESIDE, showing the new life the children of its readers are leading, to appreciate what opportunities for adventure a farm affords.

Nothing is more pathetic than the child who has never learned to play. Many nervous break-downs are directly caused by the failure to acquire the habit of play in childhood. The extent to which adults use play in their own lives makes it easier for the child to start right and to keep on the right track.

There is wonderful training for the growing child in play. In it the children learn to discipline themselves and each other. It develops initiative, self-confidence, and judgment. The same strategy worked out in games was found to be the basis of success in war maneuvers.

Our Presidents have helped us all by showing in recent years the value of continued capacity for play. While a few years ago recreation for an adult doing serious work was taken, if at all, quietly, or even in secret, now it is in the open, and is an acknowledged part of the program. This readiness to plan for getting the most out of life, in both work and play, promises to raise standards of health and living, and to teach the child how to reach them.

Games interfere with the farmer's plans, perhaps, yet since they are of value in the education and health of the boy, is it not worth while to make a place for them in the day's program? No achievement is of greater importance than to establish right ideals for a child to grow up to, and to afford him associations which he will carry through life with satisfaction and pride.

I remember one evening walking up the road in a Swiss village, and stopping to see the enjoyment a group of young farmhands were getting from some simple gymnastic apparatus placed out of doors in the schoolyard. Night after night they came there and went through stunts and contests which brought into use muscles not exercised in the day's occupation. Twice a week, in the inn parlor, they joined with others in community singing that would have done credit to professional groups. These experiences brought to mind the loafers around the corner store in some of our own rural communities—as fine young men, potentially, as one could know, but no one has produced the [CONTINUED ON PAGE 33]



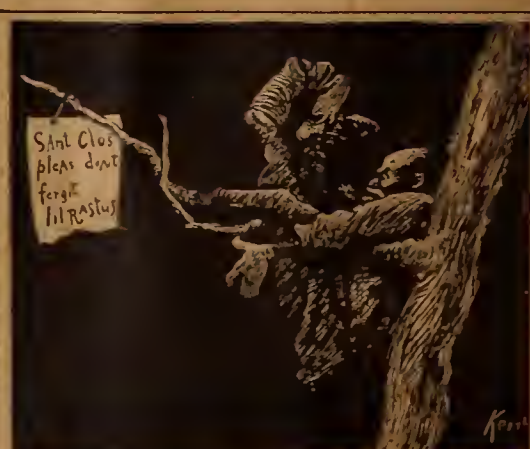
"Ef dat blame fool boy ain't done lit up a fish down dat chimbley!"



"Ah wondah ef dis old powdah horn will burn!"



"—great—angel—Gab'l—!'"



"Fergit yer! Yer low-down pestiferous sassinator! How kin I?"

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Two distinct aims, each of them conceived in the interest of the public we serve, have animated this Company in all its activities since the beginning.

One is to produce products of uniformly fine quality; the other is to manufacture and distribute these products in sufficient volume to keep their cost low.

The passing years have seen the things Goodyear builds move steadily onward in excellence, and in the abiding public regard that such excellence always compels.

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GOODYEAR
CORD TIRES

DODGE BROTHERS BUSINESS CAR

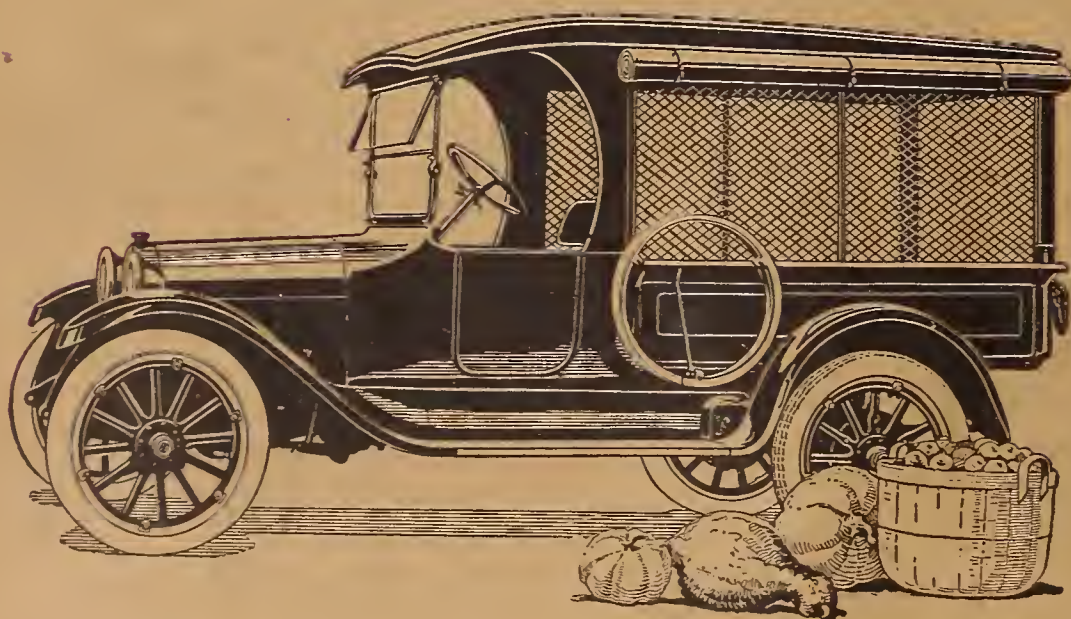
During the war the shell-torn roads of France advertised to the world for all time the wonderful strength and powers of resistance in Dodge Brothers construction.

The Business Car embodies this same splendid sturdiness and ability to stand up under continued hard use, on and about the farm, and to and from town.

It has a universal good name for infrequency of repair and unusually low cost of operation.

Every inquiry you make will convince you that it is ideal for farm use in point of size, weight, capacity, low cost of haulage and long life.

DODGE BROTHERS, DETROIT



Too Much for Feeders?

(CONTINUED FROM PAGE 7)

are similar to those on cattle, show the business to be vastly different from that of making beef, because lambs are the only kind of livestock that it pays to make good all the time. True, prices may fluctuate, but, taking the year as a whole, unless the receipts are very small, the range between prime lambs and poorer grades is generally maintained.

Here is the table; and it shows the same thing as with the cattle:

	Top Lambs	Top Feeders	Av'ge Lambs	Av'ge Feeders
January ..	\$11.10	\$10.25	\$10.35	\$ 9.15
February ..	11.35	9.65	10.50	9.60
March.....	12.15	11.40	11.15	10.50
April.....	12.85	11.65	10.95	10.45
May	13.35	10.50	10.00	9.75
June	12.10	9.70	10.05	8.80
July.....	11.80	9.50	10.70	9.00
August	11.55	10.70	10.50	9.55
September .	11.30	10.65	10.35	9.10
October ...	10.90	10.15	10.05	8.75
November .	11.10	9.20	10.15	8.60
December..	11.45	9.55	10.45	9.10

As with the cattle, these prices do not mean anything in the way of telling you what you will get from month to month for your lambs, but they do show the average margins that have prevailed in the past.

Were it possible at the present time, I would like to carry this investigation back to the farm, in the way of ascertaining costs of making beef, pork, and mutton. However, since very few farmers have kept cost records on their feeding ventures, this feature would be difficult to carry out.

With accurate information as to the cost of gains, it would be an easy matter to give the producer a complete cost system, such as would compare favorably with those now in use in our factories.

I KNOW such a system would be welcomed by our feeders, as it would enable them to present a better case in demanding the cost of production and a fair profit.

If such a thing were possible to get, it would have come in mighty handy last winter when feeders lost thousands of dollars on a breaking market. As it stands now, a man never knows whether he will make money or lose something, until after his stock has been sold and a final settlement made. On the other hand, if he knows what the cost of production is he could sell his cattle on a breaking market, regardless of condition, and have a chance to come out with a small rather than a big loss.

The one big thing which these tables show is the fact that we pay too much for our feeding stock. This has been known before—at least, producers had a well-founded opinion—but nothing brings it out so clearly as does this article. These figures not only show we pay too much, but in a way they reveal the amount in excess of what the stock should cost the producer to make him money.

They also show the fallacy of buying feeding cattle on the basis of a five-cent margin under the top of any single day's market. This is a big thing, and something which feeders should discontinue.

EDITOR'S NOTE: Inquiries promptly answered. State problem in detail, enclosing self-addressed envelope. Address Editorial Service Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Beats Commercial Fertilizer

IN THE January issue of FARM AND FIRESIDE I note C. M. Baker's article on handling poultry manure. As I understand it, he does not mix the acid phosphate with the manure until he applies it to the land. I do this with manure when I store it, for the reason that the sulphate of lime in the acid phosphate is a nitrogen fixer, and prevents the escape of nitrogen in the form of ammonia. If we store the manure for a while, and then go to remove it, there is a strong odor of ammonia which will almost take our breath. If acid phosphate is mixed before storing, this loss is prevented, and the manure is a much better balanced fertilizer. I store it in barrels, and use it on my potatoes. I thus avoid buying high-priced complete fertilizers, and get even better results.

A. J. LEGG, West Virginia.

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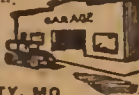
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FREE BOOKLET

Appleton
Manufacturing Co.

609 Fargo St.,
Batavia, Ill.

A Paying Herd of Purebreds

[CONTINUED FROM PAGE 13]

Girl, already mentioned, brought \$4,000 in 1919; her dam, one of the original nine cows, cost the judge \$100. Again there is the bull calf which the judge sold for a nominal sum, and which, in 1918, was owned on a Pennsylvania farm. From here he went to a county agent from North Carolina, being practically "thrown in for good measure" when the agent bought a load of heifers to distribute to progressive farmers in his territory. With the rise to fame of King of Chilmark, this Carolina county found itself in possession of a veritable gold mine.

It is in this same field of breeding for safe and definite results that Judge Chichester is proving his worthiness of the success that has come to him. When he decided that he would have to get new blood in his herd, he naturally sought a bull that would "nick" well with the King of Chilmark family. His choice was Aristocrat of Harbor Hill (his \$400 purchase), of whom these interesting facts are true: His sire and King of Chilmark's grandsire were half-brothers, which makes the two bulls sufficiently but not dangerously related. Secondly, it appears that the daughters of King tend somewhat to long-leggedness, whereas those of Aristocrat are characteristically short-legged and long-bodied—this provides an almost ideal offsetting of characters.

AND now just a word as to the larger results of Judge Chichester's achievements. For one thing, the creation on a small, unknown Virginia farm of a wonderful, high-yielding family of cows has served as a valuable offset against a dangerous tendency to overemphasize and overvalue a few much-advertised families or strains. It has proved that there may be fine animals on any farm, if but someone will locate and develop them.

And lastly, the fact that all these results have been built upon a foundation of ordinary equipment, limited means, and average intelligence has proved a tonic and an inspiration for the thousands of men who man the majority of our farms. The truth that the old red barn can shelter just as fine cows as a palatial structure of concrete; that a man who studies, observes, experiments, and truly tries can win success, and no less than he whose way is paved with dollars—all these things make up a message of hope and encouragement that will go a long way toward maintaining our national belief in the soil.

The Way This New Treatment Was Discovered

[CONTINUED FROM PAGE 9]

scab was absolutely checked, or at least very inactive, and that in every case where scab was prevalent and active the soil was not sufficiently acid.

With this definite knowledge he was sure that if he could find a practical method of bringing the soil in a potato field to the right point of acidity he could master the scab. The old sulphur idea seemed to him as the "best bet," but this alone was not practical in every sense, because sulphur was only active, or would only oxidize sufficiently, on certain fields and not on others—there seemed to be an unknown factor of the soil that affected this very materially.

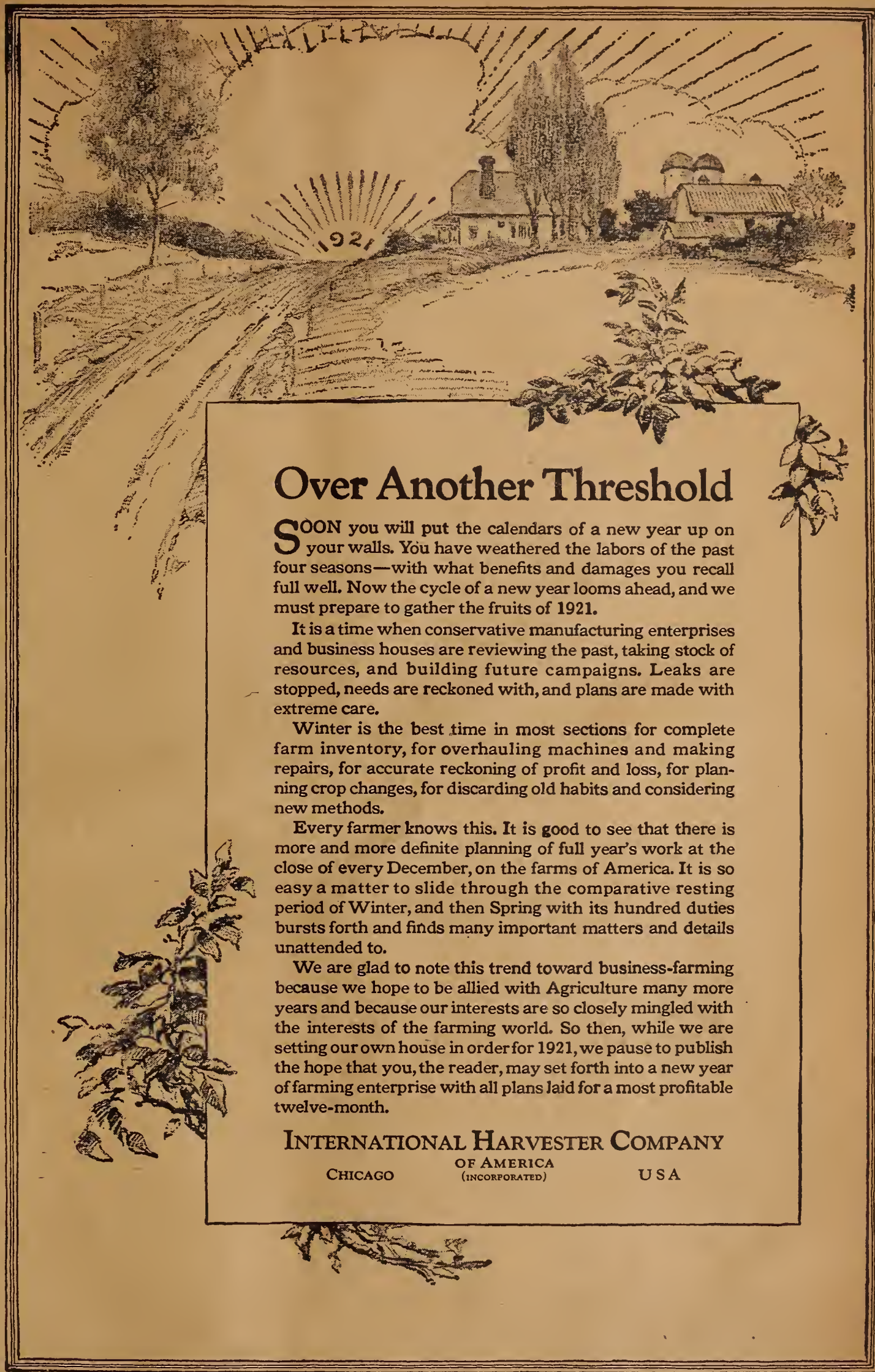
Just about this time, in another department of the same experiment station, Doctor Lipman found the unknown factor in soils which oxidized sulphur. It has already been supposed by other scientists that a living organism, or "bug," was the agent that oxidized the sulphur in the soil. They had, however, never located the bug. But Doctor Lipman found this bug, and separated it from the rest.

Picking up this lead, Doctor Martin supplied the missing link by using these bugs with the sulphur for potato scab, and making sure that the sulphur applied really would make enough acid in the soil to be harmful to the organism that caused scab.

Although the finding of this method was the result of a lot of careful and tedious work, it nevertheless is a very simple and practical method, and the doctor has, with it, checked potato scab on many fields which had previously grown such scabby potatoes that it was absolutely impossible to grow enough marketable potatoes on these fields to pay for the seed alone.

We are extremely fortunate to be able to get the story of one of these instances from Doctor Martin himself.

THE EDITOR.



Over Another Threshold

SOON you will put the calendars of a new year up on your walls. You have weathered the labors of the past four seasons—with what benefits and damages you recall full well. Now the cycle of a new year looms ahead, and we must prepare to gather the fruits of 1921.

It is a time when conservative manufacturing enterprises and business houses are reviewing the past, taking stock of resources, and building future campaigns. Leaks are stopped, needs are reckoned with, and plans are made with extreme care.

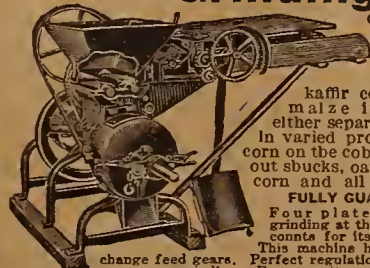
Winter is the best time in most sections for complete farm inventory, for overhauling machines and making repairs, for accurate reckoning of profit and loss, for planning crop changes, for discarding old habits and considering new methods.

Every farmer knows this. It is good to see that there is more and more definite planning of full year's work at the close of every December, on the farms of America. It is so easy a matter to slide through the comparative resting period of Winter, and then Spring with its hundred duties bursts forth and finds many important matters and details unattended to.

We are glad to note this trend toward business-farming because we hope to be allied with Agriculture many more years and because our interests are so closely mingled with the interests of the farming world. So then, while we are setting our own house in order for 1921, we pause to publish the hope that you, the reader, may set forth into a new year of farming enterprise with all plans laid for a most profitable twelve-month.

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(INCORPORATED) USA

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Why did farm land values during late war conditions increase from 200 to 400 per cent? Undoubtedly because of the high price of agricultural commodities, chiefly. Since in the main only the most productive of those lands situated in the vicinity of the larger centers of population and transportation facilities were wholly those affected, good land at reasonable prices may still be had along the Nashville, Chattanooga & St. Louis Railway in Kentucky, Tennessee, Alabama and Georgia that will produce per acre, per year, from 4 to 6 tons alfalfa, 30 to 40 bushels wheat, 12 to 20 barrels corn, 80 to 100 bushels oats, clover, pea and other hays in proportion, and \$10 to \$20 per month per cow; and other lands that will produce profitable crops at from \$5 to \$20 per acre.

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Coöperation as I See It

[CONTINUED FROM PAGE 6]

cannot impose a charge on the smallest member without imposing the same charge proportionately on themselves. The directors cannot do a shrewd thing for their own interest without doing the same shrewd thing for the least grower in the association.

There is an absolute community of interest. The association itself can make no profit. All the overhead expenses are taken proportionately out of the proceeds of the crop. There is no possible adverse interest between the association, as such, and the members, as such.

This is wholly different from the usual operation in the Middle West. There the local coöperative elevator buys wheat from anybody. It buys wheat from its own members at fixed prices, and these prices may vary from 10 to 90 cents per bushel.

Such local elevators try to make profits from their own members as well as from the outsiders. The member really forms an elevator company which ought to be able to buy and sell better

than he could individually. Then it proceeds to use that superior knowledge for its own benefit, in a large sense, and for the individual grower, in a small sense.

To be sure, these local elevators bring much more to the grower than the old-line elevators or the mere speculators. Middle West coöperative elevators have been worth to the growers of America no less than fifty million dollars a year in the long run. Nevertheless, they have not been truly or wholly coöperative.

John Smith sells his wheat to the local elevator for \$2.20, John Brown for \$2.30, John Jones for \$2.50, Richard Roe, a rank outsider, for \$2.80. The local elevator makes some profit out of the cheaper wheat. It pays its eight per cent dividend to stockholders; then, as a rule, distributes its surplus on a tonnage basis to its members.

IF THE surplus permits 10 cents per bushel, John Smith will get a total of \$2.30 for his wheat, John Brown will get \$2.40, and John Jones, \$2.60. Richard Roe receives no part of the surplus, but he has the \$2.80.

Each one of these farmers has received a different price for the same grade of wheat. John Brown and John Jones have made money off the first member; the outsider has made more money than any of them. The collective wisdom was used as much against the grower member as for him.

With the California idea the association would not touch the wheat of Richard Roe at any price. The association would take the wheat of its members and pool the proceeds of all sales. To be sure, it would arrange for a substantial advance payment to each one of them—practically, the loan value of the wheat.

In the long run each would have received absolutely the same for the same quantity and grade of product.

This internal pooling, the absolutely common interest between the association and the members, and the elimination of non-member products are absolutely essential to true coöperation.

4. Coöperative marketing associations must not speculate. They do not buy from an outsider or from a member so as to make a profit from his product. The association itself is not interested in either stockholders or members from the standpoint of their investments, but solely from the standpoint of the product that they must market through it.

The coöperative association must endeavor to substitute a real commercial method to take the place of the haphazard

system of individual sales or of unfederated group organization.

But even these factors will not necessarily make a marketing association successful. Attention must be paid to the law, to finance connections, to modern commercial aids, such as advertising, and to the matter of personnel.

Good motive is not enough to insure success. When a right plan has been made from an economic standpoint, it must meet the strict requirements of the federal and the state laws.

Bankers should be called into conference to work out the method of organization and

operation from a financing standpoint. Professional salesmen and advertising men should be consulted as to the best methods for marketing.

Experts should be selected for every phase of the work. A fine farmer should not be selected as the chief marketer; a fine marketer should not be selected as the traffic manager; a fine traffic expert should not be

selected as a grading inspector.

When once the association is organized, every part of its commercial activities should be conducted by absolute experts, and none other.

Experts cost money, but they cost far less than the inevitable losses which amateurs assure.

California growers are proud to pay men who are handling millions of dollars' worth of products salaries somewhat commensurate with the responsibilities of their positions. No just man can urge a fair price for wheat and deny a fair price for brains.

Salaries must be held secondary. Efficiency must be secured and paid for. The great speculators of America buy talent to get their statistics and carry out all their buying and selling operations throughout the world. The money of the speculators hires brains to work for the speculator against the farmer.

It is just as easy for the money of the farmer to hire brains of equal power to work for the farmer and the public.


In some local associations they have by-laws which provide that no man can hold a salaried position in the association unless he is a farmer from behind the plow. This is an unfortunate limitation. The emphasis should not be put on the man's ability or experience as a producer, but on his ability and experience as a marketer.

It is essential to have the right plan, the right commercial methods, the right financial connections, and the right experts for every particular position demanding expert knowledge or ability.

5. The idea of coöperative marketing associations is spreading like wildfire. The contribution of California is the contribution of a great working laboratory in which many experiments have been made. Many things have been discarded; enough remains proved to justify its use as a precedent throughout the country.

BUT farmers should not feel that they must go through the entire California experience in order to reach successful results. It is frequently said that coöperative marketing associations are born of adversity and die of prosperity. This is a smart remark, but it is better phrasing than truth.

Powerful associations have been formed under all kinds of conditions in California. To be sure, there must be some circumstance warranting improvement or there would be no ground for a change of any kind in any phase of life. Nevertheless, the farmer does not need to wait until he is



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With your car equipped with Vacuum Cup Tires, the smooth, skiddy, oily pavement holds no more danger than does the dry road.

For the Vacuum Cup Tread—guaranteed not to skid on wet, slippery pavements—exerts a vacuum suction, gripping the surface firmly until the hold of each Cup is gently released by the forward rolling of the tire.

Yet this safety costs you nothing—you pay for Vacuum Cup Cord and Fabric Tires approximately what ordinary makes would cost, despite their guaranteed service—per warranty tag attached to each casing:

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Write for booklet—sample cuttings
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The GLASTONBURY KNITTING CO.
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TWO PIECE UNION SUITS



absolutely broke before he thinks in terms of cooperative marketing.

The interpretation of cooperative marketing as a "last hope" shows real lack of understanding of its fundamental justification. It may be harder to get farmers to sign agreements for cooperative marketing when they are making piles of money. Adversity makes it easier to form the organization, but adversity does not make the system any more or less correct. Nor does prosperity destroy the system or weaken its commercial stability.

You can have instance after instance where California associations have absolutely solved their marketing problems to the great prosperity of the growers and of the adjacent communities, within three years of organization.

Cooperative marketing is not a desperate remedy. It is the substitution of an idea which, at all times and under all conditions, is superior to the hit-or-miss system of individual, unintelligent marketing.

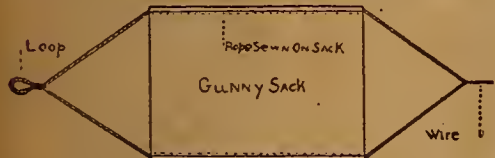
Cooperative marketing, as exemplified in California, has proved a tremendous boon to the farmer. It has insured prosperity to him. It has stabilized the value of his investment. It has raised his standard of living. Cooperative marketing has made the small California farmer prosperous and contented; and so it will American farmers everywhere.

Cooperative marketing has likewise made thriving, busy communities out of towns that were actually as dead and dull as many Western towns along the railroad now look since prohibition struck them. In California the communities, like San José, Petaluma, and Fresno, where prune, egg, and raisin cooperative associations center, are solidly behind cooperative marketing. When sign-up day comes, practically the whole town closes, the merchants join in the work to secure signatures and start the cooperative association on its new term of activity. As a community builder, as insurance to the farmer, cooperative marketing is becoming the most important factor in American agriculture.

My Straw Carrier

I FIND that this device saves me a lot of labor in bedding down my cattle with straw. To make this carrier I took an old gunny sack and cut the sides open so that it would lie flat. At each end I fastened a rope somewhat on the order of a hay sling. On one of these ropes I attached a wire and on the other I made a loop. After filling the bag I pass the wire through the loop and draw it tight. This sling will hold about 20 forkfuls of straw, and greatly facilitates the work of bedding.

H. MILLER, Ohio.



This diagram shows how to make the carrier

What Handy Did

[CONTINUED FROM PAGE 16]

chickens as with other live stock. In winter he always feeds the morning grain in deep straw, and scratching for this keeps his hens warm and in good condition. The shelled corn fed at night is given so that the hens can pick it up quickly and go to roost with a full crop. A dry mash is always kept before the hens in hoppers. It is made of bran, shorts, and fine-ground corn. The hens get all the sour milk they can drink. When this is not available, 25 or 30 pounds of high-grade meat scraps are added to every 100 pounds of dry mash. A liberal supply of alfalfa leaves is used as part of the feed. This is important, as it supplies certain food elements which make healthy fowls. People who do not have alfalfa or clover can use 10 pounds of fine alfalfa meal, added to each 100 pounds of dry mash. Oyster shell is always kept before the hens, and sometimes it is necessary to supply fine gravel for the fowls.

Handy says that he has saved a lot of money by selling the poor layers whenever they are found. Over 100 loafers were weeded out during the year.

As the conversation ended, Jones told Adams that he did not realize there was so much in the proper care and management of farm poultry. And as he left the bank he added that he intended to clean out his hen house and fix it up so he could make his flock really profitable.

Do You Know—



STANDARD PRACTICE

The use of Timken Tapered Roller Bearings at points of hard service in the great majority of leading tractors—and in power-driven farm machinery—is proof of leadership established on the tapered principle of design, quality of manufacture, performance, and service to the automotive industry.

that about a quarter of a million farm tractors are making money for progressive farmers?

that the profit-making possibilities of the tractor are limited only by the adaption of the proper type to individual needs?

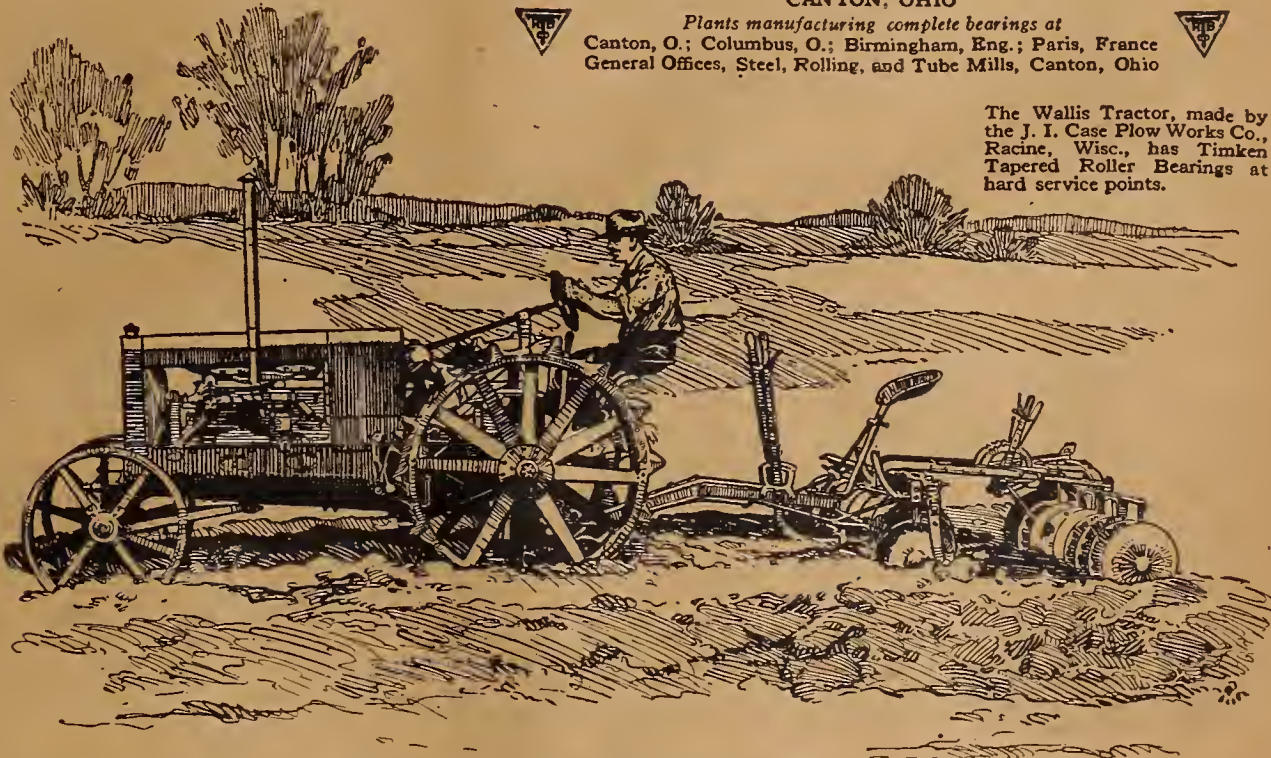
that the really efficient tractor permits of no possible waste of power by incorporating Timken Tapered Roller Bearings at *hard service points*?

that Timken Bearings can't wear out—the adjustable feature provided by the taper makes them "wear in"?

that the farsighted tractor builders are following the lead of almost 90% of the passenger and commercial car manufacturers of the country by making Timken Bearings universal, essential equipment?

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It tells how in a few weeks you can earn from \$150 to \$400 a month in the Auto and Tractor business.
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Send me Free Literature describing the Oliver Oil-Gas Burner with particulars of your 30-Day-Trial Offer and Introductory Price.

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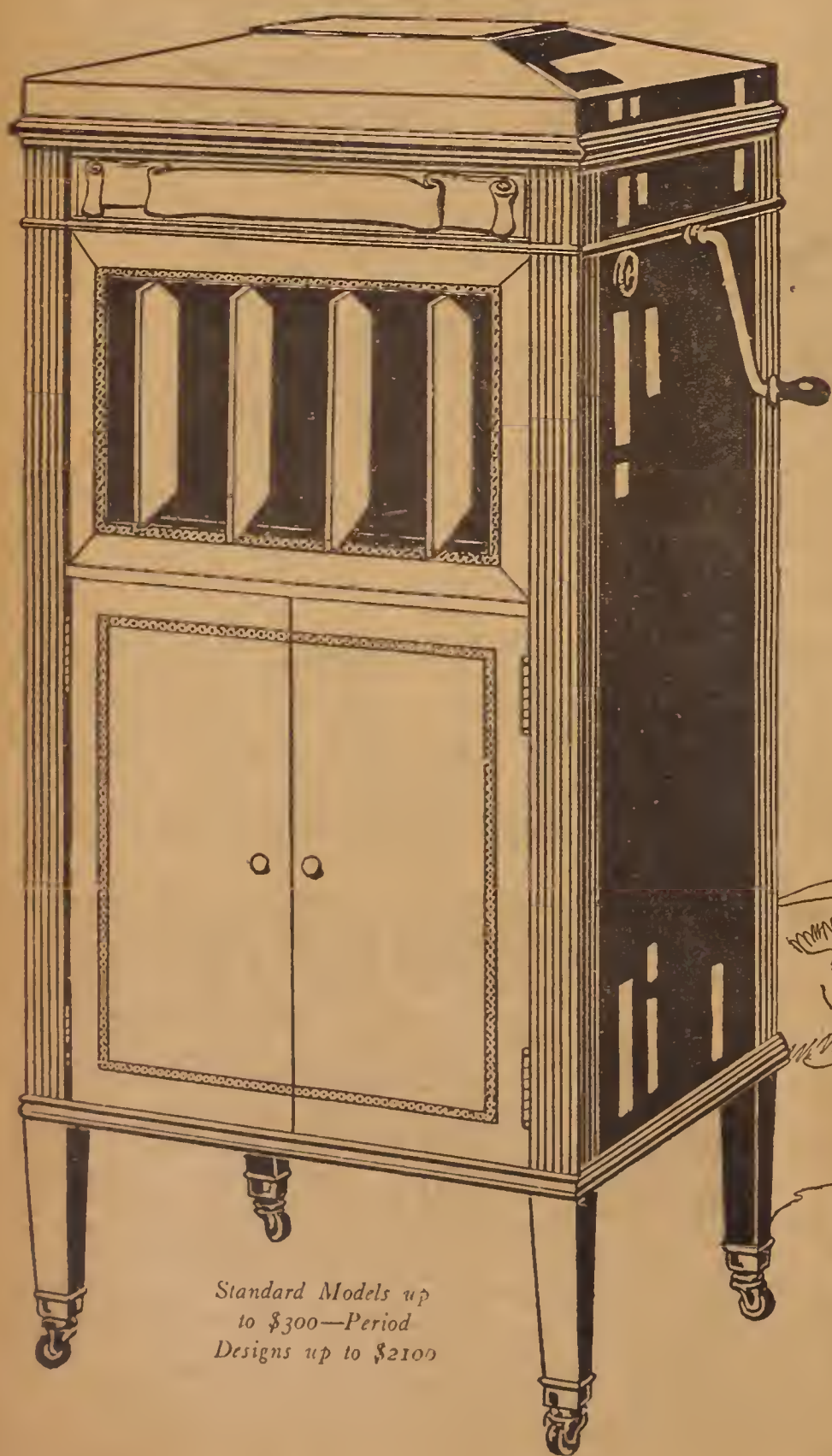
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Give Music This Ch

Give your family a Columbia G
Columbia Records for Christmas. T
your fireside you will find such famo
Columbia popular artists as Al Jolson, B
Frank Crumit, Harry Fox, Marion I
Bayes, Ted Lewis' Jazz Band, and Van
such *exclusive* Columbia opera stars
Gordon, Hackett, Mardones, Ponselle,
Stracciari; and a world of other artists
on any Columbia dealer and he will g
strate that the Columbia Grafonola
Columbia Records always gives you
ductions of the music these artists themse
on the original wax in the Columbia

COLUMBIA GRAPHOPHONE COMPANY, N
Canadian Factory: Toronto



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Give Music This Christmas

The Only Non-Set
Automatic Stop

Nothing to push or pull. The record
just runs the length of the record
and stops itself. No more
trouble. It's a new idea in the
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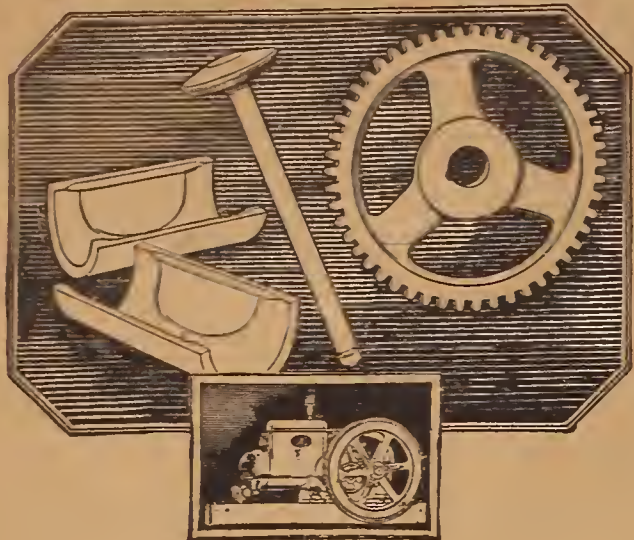
Standard Model is
to \$400—Piano.
Designs up to \$1000

Give your family a Columbia Grafonola with
Columbia Records for Christmas. Then right at
your fireside you will find such famous *exclusive*
Columbia popular artists as Al Jolson, Bert Williams,
Frank Crumit, Harry Fox, Marion Ross, Nora
Bayes, Ted Lewis' Jazz Band, and Van & Schenck;
such *exclusive* Columbia opera stars as Carrieros,
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Precision methods of manufacture by accurate machines make corresponding "Z" Engine parts exactly alike.

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Note also these other "Z" features: Runs on kerosene as well as gasoline; Bosch magneto; more than rated power; clean-cut design; long life.

Benefit by the experience of farmers using more than a quarter-million "Z" engines—call on your nearby dealer today and he will show you why you should own a "Z."



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No horse needed with a Kirstin Puller—no extra help required. One man alone pulls biggest stumps in 4 to 10 minutes. The wonderful Kirstin One-Man Puller pulls little, tough or green stumps as low as 5c each; also brush, hedges and trees. Cuts land clearing cost way down. Costs less to buy—less to operate. Weighs less—has greater strength—more power.

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Quick shipments from Escanaba, Mich. Atlanta, Ga. Portland, Ore. Soo, Canada

World's Largest Makers of Stump Pullers!



All but the wee folks entered the Eskimo races

The Garden of Christmas Trees

By Emily Rose Burt

THIS notice went in a little Christmas-tree-sealed envelope to each member of a certain Sunday school, from the youngest in the primary department to the oldest arguer in the adults' Bible class:

Please
Visit the Garden of Christmas Trees
Friday evening, December twenty-fourth
At the Congregational Church Parlors

The affair took the place of the usual Sunday-school tree, and was voted ever so much more fun.

A huge finger pointed from a tree at the edge of the path toward the proper door, and the sign read: TO THE NORTH POLE GARDENS.

On entering the door everyone was surprised, in spite of the promise of the invitations, to be plunged into a world of little cedar trees.

They grew in groups and rows and circles, all tiny, and fastened to board standards.

Upon closer examination each tree was found to be labeled with the name of some Sunday-school teacher—denoting her class.

So everybody began to look around to locate his or her own class tree in the garden.

The gardener, in the person of the superintendent, dressed as Santa Claus, invited everybody to inspect the garden. The fruit, he announced, would be picked later; for each tree bore such fruit as handkerchiefs, harmonicas, dominoes, dolls, etc.

In one corner was a group of trees labeled "Refreshment Trees." One tree had its branches loaded with sandwiches tied in wax paper; another was the cup-cake tree; a third bore a crop of spoons; a fourth, a shining array of tin cups.

Presently the gardener and his assistants (the teachers), each wearing either a red paper sunbonnet or a broad-brimmed farmer hat, began to harvest the Christmas-tree crop. The grown-ups and children sat down on the floor and benches; and as the name of a tree was called off, the members of the Sunday school who belonged to that class were allowed to flock about their tree and pick off their own presents.

BESIDES the class trees, there was a Candy Tree, an Orange Tree, and a Popcorn Tree, which the gardener with his assistants attended to.

Of course, the present-distributing was the event of the evening, but during the early part there were a few jolly ice-breaking stunts. Ice breakers, you know, are needed at the North Pole.

The first was the Eskimo Race. Each participant was given a small lighted candle, a space was cleared, and the race begun. The object was to see who could get to the goal and back without blowing out his candle. Of course, the younger ones were barred from this. But not so from the Blubber Race. The idea was to see who could "blubber" most comically. Such faces and such cries!

The stunts in which all could join were most enjoyed, and promoted that warmth of sociability for which every Sunday school strives.

A basket of lettered slips was passed, and each person drew one. The leader then announced that he wanted some North Pole animals, and would the seal please step forward. The persons holding respectively

the letters S E A and L arranged themselves together in a group. A prim old lady, a wiggling youngster of eight, a young chap of seventeen, and a girl of fourteen presented themselves amid great giggling.

The consolidated seal was then asked to do some stunt worthy of its nature.

After that the walrus was called for, and was followed by the polar bear, the whale, and the penguin.

The mixing-up that resulted was conducive to fun.

At refreshment time the Refreshment Trees were surrounded and plucked of cups and spoons, sandwiches and cup cakes. Hot cocoa was served from the church kitchen at long Christmasy tables in the dining-room. Ground pine stretched up and down the middle of them, with scarlet Japanese lanterns swinging overhead.

The tin cups were filled up with steaming cocoa, and the sandwiches and cakes eaten from paper plates.

A program could be given instead of playing games, but the games bring old and young together in a very companionable way.

EDITOR'S NOTE: Suggestions for program material will be sent on receipt of stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

My Way of Handling Geese

STRANGE as it may seem, geese will flourish on rations suitable for the cow. Geese like clover chaff or hay. I find that they like to pick over corn fodder, and find much in it that they consider good. Silage has been tried with good results by some feeders. Breeding geese must not become too fat, or the fertility of the eggs will be injured. Some geese owners found this spring that their eggs did not hatch as well as usual. Last year the corn crop was unusually good, and possibly many of the breeding geese were fed too much corn and became too fat.

I think oats is more satisfactory for geese than corn. If they seem thin, corn can be added to the ration in moderate quantities. However, most geese will keep in good breeding condition on oats and fodder. They fatten so easily that it is not difficult to keep them at a good weight without much corn.

My geese seem to enjoy ranging through the slush and snow on days when the farm hens remain close to shelter. But at night the flock needs a dry roosting place. A shed containing plenty of straw will give all the protection needed, and will save the manure, which is a valuable by-product even with a small flock. Clean straw should be added as the condition of the house demands it.

Mature geese make the best breeders, and when a pair or trio are mated up it is best to leave the mating for several years. These birds seem to develop much more affection for each other than is the case with other fowls. Ganders are usually kept until three or four years old, but the geese will prove good layers and breeders until they are ten years old, and sometimes longer. It does [CONTINUED ON PAGE 25]

The Little Pigs and How They Grew

By Ross B. Johnston

ANY stories have been told of small pigs that grew and got fat under good care, but this little story beats them all. It is the story of how a few little pigs grew, in numbers, until they filled an entire county. It tells how Kanawha County, West Virginia, is replacing its scrub hogs with purebred Berkshires. And this story is true, although it is a "lost out-Butler's Ellis Parker Butler's pigs is Pigs" yarn.

County Agent T. Y. McGovern got the pig under way in the fall of 1914. It had been a discouraging year. A number of members of the Kanawha County Farm Bureau, sitting around the table in the chamber of commerce rooms, developed a plan by which it was believed the boys' interests in club work and life on the farm would be increased.

The plan evolved has been dubbed "the less chain pig club." Little begging and eating was necessary the part of the organizers, for, like the proverbial mare, it takes money to make a pig go.

Pigs were cheap in 1914, and the fellows with a warm spot in their heart decided to furnish purebred Berkshire pigs by the piece. As 30 pigs were considered sufficient to start the organization in its raising industry, the \$150 was soon coming. It was decided to place the five centers in various parts of the county. The plan was to place five sow pigs and a male in each community.

On suggestion of the farm bureau livestock committee, the Berkshire was chosen as the breed best adapted to local conditions.

The boys securing the purebred sow pigs signed a contract to breed them to the purebred male, placed in the community by the farm bureau, and further agreed to place the Kanawha County Farm Bureau sow pig for the one received, and one for two services of the male. The bureau decided to turn the two sow pigs received over to other boys of the community for club work. The pigs were distributed in the spring of 1915, the first ones coming from the farm of J. L. Dickinson at Kinison, West Virginia.

The boys took to this pig business like ducks to water. Here was just what they had been looking for—something alive, something they could play with, something they could care for, and something that would reward them by at least a satisfying result. Furthermore, the pig was something the boy's father couldn't take away from him. It is a safe bet that those 30 sows got as much personal attention bestowed upon them as any pigs in Uncle Sam's domain during the season of 1915. The crop of pigs in the fall of 1915 and the spring of 1916 from 22 of the sows, 11 having failed to breed, was 72 sows and 83 males, the boys turning over 34 sows on their contracts, and disposing of

38 to farmers for brood sows. There was no effort made by the bureau to keep a record of the distribution of the males. Most of the good ones, however, were disposed of by the boys for breeders, while the inferior individuals were either kept or sold for killers.

The 97 purebred sows, including the original 25, farrowed, in the fall of 1916 and the spring of 1917, 373 sows and 401 males. The boys turned over to the bureau, on their contracts, 61 sows, and 20 additional sow pigs were purchased with the Humphrey, Cox, and Carr fund, enabling the bureau to set 81 more boys up in the pig business. Thus, with the 253 sows of this crop sold for brood sows, and 93 of the 97 in the county at the beginning of the season, the county set out with 427 sows for its 1918 crop.

At this stage of the game the accounting department of the farm bureau broke down, and it was decided best to confine the records to pig-club work only. In the fall of 1917 and the spring of 1918, the pig crop was 757 pigs, 372 sows and 385 males.

Estimating that the other 334 sows in the county brought as great an increase as the club sows, they would have brought 2,720 pigs, which, together with the 757 farrowed by the sows belonging to the club boys, would make a total of 3,477 purebred Berkshires in Kanawha County on May 1, 1918.

Estimating the brood sows and the sow pigs in the county on May 1, 1918, on data from previous years' record, the 1919 crop should have been started with 1,934 sows. These sows should have farrowed 15,472 pigs, of which 7,736 should have been sows. On the same basis, the 1920 pig crop should have been 61,688. As the pig crop of the county is normally only 16,000 head, the farm bureau evidently has a clean crop of Berkshires this year, and in addition lots of pigs to sell.

And they are still multiplying.

My Way of Handling Geese

[CONTINUED FROM PAGE 24]

not pay to inbreed geese, but if new ganders are obtained it is wise to buy them from the same flock, so they will be acquainted and not quarrelsome. They should be mated in the late fall and early winter, so as to become accustomed to their mates several months before the breeding season. Geese need plenty of water, and it is best to supply it in a fountain in which they can only reach their bills. When watered in large shallow pans the geese will soon splash the water around, and make it unhealthful for drinking.

R. G. KIRBY, Michigan.

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**DON'T
DIE IN THE HOUSE**

Last-Minute Christmas Gifts You Can Make at Home

By Nina H. Duffield

WE FARM women, with the rush of fall work hardly out of hand, are often dismayed to find the Christmas season fairly upon us and no plans made for it. But even a few days before Christmas is not too late to "get into the game," if one is willing to be a little bit original. So, instead of rushing to town and undergoing that awful experience of last-minute shopping, why not look around the

farm and find gifts right at hand which will carry with them a homey atmosphere and a real Christmas spirit? Your friends will hail these things with delight. I know, because I am a farmer's wife and have tried these plans myself.



I once sent a dressed turkey clear to my mother in Illinois. Since it was to travel all the way from Minnesota, I planned that it should reach her a day or two before Christmas. Although I was deprived of the joy of cooking that dinner for my mother and the folks at home, I felt that I had a big part in their family celebration after all. It was all farm-grown products—a dressed turkey, a sack of dried sweet corn, a jar of peas, and three one-pound coffee cans, packed each with fresh butter, lard, and home-made mincemeat. I made everything festive with bright wrappings, and tied gay little verses to the packages. This really is a delightful way to remember "home folks."

I always think that the object of a gift is to bring real pleasure to the receiver. That's why I send a dozen fresh eggs at Christmas to one friend who has a special fondness for egg breakfasts. You may be sure that a dozen of them, separately wrapped in twists of tissue and packed in a gay holly box, will be received with enthusiasm. Copy this little rhyme and tie it to the box.

The rarest fruit that I could find
I send to this good friend o' mine,
To give a little "eggstra" cheer
This happy season of the year.

If you are sending a dressed turkey or duck or chicken, be sure that it gets there at least a day before Christmas. This verse on a little card tucked under its wing is sure to give an added flavor to the gift:

Oh, let your fare be fowl to-day
And frets, like feathers, fly away;
May joys abide and cares take wing
And lasting luck the wishbone bring!

A glass of jelly makes one of the daintiest gifts imaginable. A friend once sent me kumquat jelly from Alabama, and the rollicking verse which accompanied it made the little gift an absolute delight:

May Christmas bells, which sway and swing,
An avalanche of blisses bring
On your devoted head;
Yes, an avalanche is what I said—
An avalanche of joys, by jing!
A-tumbling down, bing-bang, pell-mell,
And tasting sweet—like this here jell!

A pie pumpkin, in its orange coat, needs no embellishment. Tie your Christmas greeting to the stem, or with brass tacks fasten the card firmly to the side:

Herewith, my friend, the
reason why
You need not lack for
pumpkin pie.
"Have all you want
and more," sez I.

Everybody is
fond of mincemeat,
especially the

kind made in country kitchens. A quart will make two fat pies. Wrap the jar well, and attach this card with a gay ribbon:

Breathes there a man with soul so dead
Who never to himself hath said,
"Where can I find some pie?"
Whose heart within him ne'er hath yearned
As to the pantry he hath turned
His wants to satisfy?

You can imagine what a desperate effort some friend in town will be making to find some "really good" butter for her Christmas dinner table. She will indeed be a queer housewife if she is not delighted with the unusual gift of a roll of fresh butter. And if you think such a gift can't be properly festive, just experiment a bit with oiled paper and dainty wrappings. Then tie with bright yellow ribbon to signify the "gift o' gold," and add a little verse just for fun:

This gay little gift, they tell to me,
Is hard to buy in its infancy.
Such a Merry Christmas I'm wishing you—
You'd better believe I mean it, too!

These are only suggestions, ideas which I have used when planning my Christmas in other years. I'm sure the fun of making up jingles for other farm presents will add a great deal of fun to your Christmas preparation. It does to mine. I've found that it pays to add a little verse or note to the present I give to my own family. It makes the most practical gift seem festive.

OLD-FASHIONED NUT CANDY

2 cups light brown sugar	1 tablespoon vinegar
1/2 cup water	2 tablespoons butter
	3/4 cup chopped nuts

Place the sugar and water on the stove. When the mixture begins to boil, add the vinegar. Cook a few minutes, and then add the butter. When the syrup spins a thread, pour it over the nuts, which have been spread on a buttered platter. Mark in squares when cool. When cold, break apart, and wrap each square in waxed paper.

MAPLE CREAM FUDGE

1 pound maple sugar	1/8 teaspoon salt
1 cup cream	1 cup chopped pecans

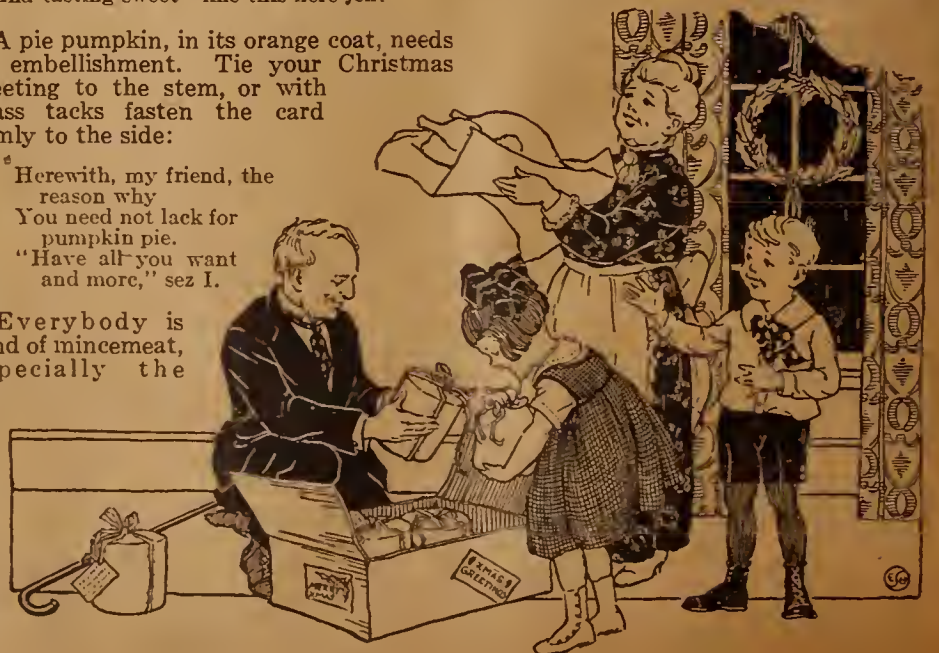
Boil the sugar, cream, and salt together until soft balls are formed when it is dropped in cold water. Then add the nuts, and pour on a buttered plate.

FRUIT ROLLS

1 cup prunes	1 cup dates
1/2 cup figs	2 tablespoons orange juice
1/2 cup walnut meats	1 teaspoon grated orange peel
1/2 cup shredded cocoanut	

Run the cooked prunes, dates, figs, nuts, and cocoanut through the food grinder. Add the orange juice and peel. Roll into a long roll, cut in slices, and wrap each one in waxed paper.

NOTE: These recipes have been tested by Mrs. Nell B. Nichols in FARM AND FIRESIDE'S experimental kitchen.



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Silvertone Records

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<input type="checkbox"/>	I'm Forever Blowing Bubbles. Hart and Shaw, tenor and baritone duet.	5019
<input type="checkbox"/>	When You Look Into the Heart of a Rose. Louis James, tenor.	10-in. 69c
<input type="checkbox"/>	Oh! What a Pal Was Mary. Chas. Hart, tenor.	5040
<input type="checkbox"/>	Beautiful Ohio. Geo. W. Ballard, tenor.	10-in. 69c
<input type="checkbox"/>	Mickey. Henry Burr, tenor.	5014
<input type="checkbox"/>	How 'Ya Gonna Keep 'Em Down on the Farm? Byron G. Harlan, tenor.	10-in. 69c
<input type="checkbox"/>	Silver Threads Among the Gold. Harry McCluskey, tenor.	5041
<input type="checkbox"/>	The Rosary. Henry Burr, tenor.	10-in. 69c
<input type="checkbox"/>	Smiles. Hart and Shaw, tenor and baritone duet.	5012
<input type="checkbox"/>	Tears of Love. Chas. Hart, tenor.	10-in. 69c
<input type="checkbox"/>	I'm a Twelve o'Clock Fellow in a Nine o'Clock Town. B. G. Harlan, tenor.	5004
<input type="checkbox"/>	I'm All Bound Round With the Mason-Dixon Line. John Myers, baritone.	10-in. 69c
<input type="checkbox"/>	Cohen on the Telephone. Harry Marks.	5023
<input type="checkbox"/>	Backyard Conversation Between Two Jealous Irish Washerwomen. J. T. Kelly.	10-in. 69c
<input type="checkbox"/>	Beautiful Ohio. Both, Hawaiian guitars. Toots Paka Troupe.	5034
<input type="checkbox"/>	Sweet Hawaiian Moonlight. Kohala March. Both, Hawaiian guitars. Toots Paka Troupe.	10-in. 69c
<input type="checkbox"/>	Dardanella. (Fox Trot.) Orlando's Dance Orchestra.	5036
<input type="checkbox"/>	My Isle of Golden Dreams. (Waltz.) Orlando's Dance Orchestra.	10-in. 69c
<input type="checkbox"/>	Patches. (Fox Trot.) Green's Novelty Dance Orchestra.	5038
<input type="checkbox"/>	My Baby's Arms. (Fox Trot.) Green's Novelty Dance Orchestra.	10-in. 69c

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You may ship me the SILVERTONE Phonograph and Records which I have marked with an (X), without any obligation on my part to buy unless I am perfectly satisfied.

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I have always been faithful in paying my obligations and am making this statement for the purpose of inducing you to grant me these terms, and I give you my pledge that you may feel safe in trusting me to pay as agreed.

Sign Here (Sign your name here plainly and carefully. If under age, some member of your family who is of age and responsible should sign this order with you.)

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I have been located in this town since.....If less than 5 years give former address.....

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More Mares Like Dimple!

By R. B. Rushing of Illinois

ON a stock farm in Johnson County, Illinois, is a twenty-two-year-old Percheron mare with a record that entitles her to a lifelong vacation. In her time she has given birth to and raised eighteen colts. Her name is Dimple, and in her prime she won a number of ribbons at fairs.

Dimple is of rugged type, and her offspring follow the same pattern. Femininity is delineated plainly in every feature of her countenance, and as a mother she was especially careful of her foals.

The character and record of Dimple brings up the question whether a true brood mare can be distinguished from a counterfeit and, incidentally, what is a fair price to place on a brood mare that promises to be or is a valuable producer. This question every man must answer for himself. About all that can be said is that a good producing mare, like other good farm animals, as a rule, is worth all that her owner asks. It is a weakness with most breeders that they can be blinded to the merits of the best individuals by a fairly good offer.

It would be comparatively easy to determine the value of a brood mare if her offspring could be seen, but this is rarely possible. In buying a mare for breeding purposes the buyer must rely on his own judgment; hence, the better a judge he is the better he is likely to fare in the bargain.

Men who have given careful study to brood-mare type are generally agreed that certain characteristics, are common to most profitable brood mares. Of first consideration is character. Character is a term that covers all qualities peculiar to an animal. It is the combined effect of general appearance and disposition. Dimple possesses an almost ideal combination.

FEMININITY is most important in a brood mare. It is not easy to describe, but is indicated by the setting of the ears, expression of eyes, shape of head and face, fineness of nostrils, lips, neck, and shoulders. The critical judge of brood-mare type, no matter what the breed, looks first for a kindly disposition, then clean-cut features, large, placid eyes, and a pleasing carriage of the ears.

In body conformation, depth and breadth are very essential, especially in the quarters for the development of the foal. Clean-cut limbs are an indication of quality, and quality nearly always indicates a good suckler. In short, the kind of brood mare that makes good is the kind that a man with a natural love for animals likes best to handle.

There is a kind of brood mare that is anything but a joy to her owner. A review of her record usually involves a hard-luck story. She is nearly always a clumsy brute. That is the mildest term her owner could possibly use in referring to her. Her clumsiness continually works against her welfare and that of her foal. She jams herself against doors and corners, threatening the life of the foal before and after birth. More than likely she will step on her foal and break a limb, or in some

way injure it. Her milk is poor in quality, or perhaps lacking in quantity. Often she is a poor feeder.

Care, of course, has much to do with the appearance of a brood mare; but, though she may be in everyday clothes, her manner or disposition will be the same. The brood mare that should be sought for her value as a producer differs from the stallion in having a lighter head, neck, and fore quarters, but is more roomy in the barrel. When the opposite of these points are present, and the mare is what is termed coarse or rough, she is quite generally a poor producer of colts. If you keep these things in your mind when you go out to buy, you are not apt to go very far wrong.

A Freeze-Proof Tank

JUST because the water tank on his silo froze almost solid in winter, and leaked all the time, Mr. W. C. Whiting, a western Iowa farmer, did not condemn all water tanks. He set out to overcome this trouble. And he did, with the aid of the state experiment station.

Mr. Whiting found that if he kept the tank full, by pumping in a fresh supply each day, it prevented a mass of ice from forming. The reason for this was, of course, that the heat from the fresh water kept the temperature up.

To protect the down pipes, the following method was used: A one-fourth-inch coating of paraffin was given the two-inch feed pipe. Over this a four-inch pipe was placed, leaving an air space between the two. Another one-fourth-inch paraffin coating was given the four-inch pipe. Then a one and one-fourth-inch packing of felt was wrapped around, and on top of this three-fourths inches of heavy paper. A covering of tar paper was put on for protection from moisture. With temperatures of 20 degrees below zero last winter, the pipe did not freeze. Recently Mr. Whiting covered the packing with a wood chute, to keep out rain and snow.

Neither paraffin nor asphalt coatings seemed to stop the leaking. In 1915 the experiment station sent a man to repair the tank in an effort to overcome the difficulty. The old material was carefully cleaned away, and the tank dried. A priming coat of a commercial asphalt, thinned with gasoline, was applied. Next, the entire tank was given a coating of asphalt one-fourth-inch thick, with an extra amount where there were slight cracks. The asphalt was then covered with a plaster coat, consisting of one and one-half parts cement and one part sand. Finally a wash of pure cement and water was brushed on to fill up the pores.

"The tank hasn't leaked a drop in over two years," said Mr. Whiting, "and we used it every day last winter."

DEANE G. CARTER

EDITOR'S NOTE: Inquiries on water tanks and other practical farm subjects promptly answered. Address Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Knitted Booties for Baby

By Helen P. Metzger



WE WERE delighted when we found these dainty little knitted booties. We felt sure you would like them. They are just the thing to keep the tiny baby warm on cold days. They are finished with a cuff at the top which is decorated with tiny wreaths of flowers. You can get the directions by sending four cents in stamps to the Fancy-Work Editor, FARM AND FIRESIDE, Springfield, Ohio. Order No. FC-129.



Humpy Squirrel's Christmas Tree

[CONTINUED FROM PAGE 12]

gratitude the tailor bird offered his skill in dressing the chickadees for the entertainment at Humpy's.

It came to pass that Mrs. Screech Owl was talking about the vanity of others—forgetting herself—when Humpy announced that Santa Claus would appear and do his duty. Mrs. Chipmunk drew back the grass curtain, and the first thing seen was that which frightened the coon and the badger earlier in the day. This object was dressed in a coat of woven grasses stained red with the juice of sumac seeds. It had something on its feet that looked like boots, fashioned out of milkweed pods for legs, and halves of walnut hulls for feet. It wore a fluffy scarf made of the fuzz of paint-brush weed flowers, and on its head it had a cap made of the same stuff as the scarf. Over its face hung a long white beard.

Mr. Coon whispered to Mr. Badger that he believed the whole Christmas affair was crooked, and he no more than spoke the words than both bolted for the door and, with howls of fear and anger, started through the woods and snow as fast as they could.

"Come back!" shouted Humpy at the fleeing forms. "That's Santa Claus, and he won't hurt you!"

"We have our own claws and we don't need any sandy claws!" panted the coon.

"I can dig all I want to with my own claws, and you can keep the extra ones!" Mr. Badger barked, not pausing in his flight.

"Santa C-l-a-u-s not sandy c-l-a-w-s!" cried Humpy, spelling the words.

"Well," declared Mrs. Screech Owl, "this is a fine mess! I knew all along that Christmas is a fraud." She snapped her jaws a few times, and then added, "I bid you all a very, very, very good night!" She turned once to cast a sneering glance at Mrs. Chickadee, frowned upon Mrs. Crow, made a face at a certain Mrs. Tree Owl, and fluffed herself out of the house.

The excitement was soon over, for the queer Santa Claus stood, harmless and wondering what the row was about, and Mr. Coon and Mr. Badger agreed to return to Humpy's if the "thing" would show them who he was. When the whiskers were taken off it was found that Santa was none other than the rabbit, who lived in the log down by the spring—the rabbit referred to by Mr. Coon a while before, when Humpy was counting noses and beaks.

"Bunny Santa Claus will now please pass out the presents!" laughed Mrs. Chipmunk as the coon and the badger sat down, looking foolish, whereupon the rabbit replaced his whiskers and in a shrill voice called out: "A package for Mr. Coon!" and the package proved to contain four snowshoes fashioned out of clam shells, the work of Humpy.

IN SUCCESSION, shoes of various kinds for birds and animals were taken from the tree. There were hazelnut-shell shoes for little birds; hickory-nut-shell shoes for larger birds; milkweed-pod shoes for squirrels, chipmunks, and rabbits, and so on, until every guest was provided for.

Indeed, there were other presents, and a little chipmunk, entering into the Christmas spirit, arose to make a speech when handed a small package found to contain a nut wrapped in a leaf and tied with a wisp of grass.

"It is a wonderful thing, this Christmas," the little fellow said, "and as I open this package I wish to thank the giver. I shall eat the nut the first day that Old Man Winter keeps me inside. When there is no living thing near me, this will help me to drive away loneliness."

"What do you mean—no living thing near you?" a very small voice squeaked, and through the leaf that covered the nut there appeared the head of a worm, who continued, "I did not wait to eat the nut, my dear sir!"

WHEN tillage begins, other arts follow. The farmers therefore are the founders of human civilization. WEBSTER.

Mr. Badger was much puzzled when he was handed a bit of bark with a big hole cut through it. He turned the piece of bark over in his paws, shook his head, and finally asked:

"Is someone making fun of me? I suppose this is meant to represent the bark of the dog that chased me last summer."

"It is not," answered Santa Claus. "Badgers, as we all know, are always digging holes. As the ground is frozen pretty deep now, we thought we'd give you one hole already dug," and everybody laughed, Mr. Badger raising a paw and shouting that the joke was on him all right.

Mr. Crow drew a small package, which he eyed a bit, and then remarked he hoped no worm would pop its head out at him, and began to peel, leaf after leaf, the covering from the present. When at last he reached the contents he held in his claws

a little scarecrow.

Santa Claus's eyes sparkled, and his rabbit nose bobbed so fast that his whiskers resembled a wind-blown towel in front of him.

The tree was all but emptied, when a porcupine whispered to someone near that he guessed he would be passed up; but, reaching high on the tree, Santa pulled down a package for Mr. Porcupine.

"This," said he, "should make you happy, dear sir!"

What the porcupine got was a cactus, and he blushed, becoming very angry, while everybody giggled. He vowed that the next time he went through the woods and chanced to meet any of those at the Christmas tree he would throw the whole cactus at them and see how they liked it. But then he remembered the shoes that Humpy had made and hung on the tree for him, and laughed as merrily as any.

THE evening was half spent, and all were lively, when there was heard a long, loud whistling sound at the door, and Humpy announced that Old Man Wind was calling.

"We go now," said he, "to the river. If the shell shoes work out as well as I expect I shall be very happy, for my idea will be a success."

Crunch, crunch, crunch! over the crusted snow the birds and animals went, each wearing his or her nut-shell shoes that Humpy had made.

Once at the river, someone remarked that Mrs. Screech Owl was not in the crowd, and then it was remembered that she left Humpy's in a huff and was forgotten.

On the ice, Old Man Wind blustered and sang, and over the ice went, as fast as the wind, the little folk of the woods, their shell shoes making excellent skates. Zip, zip, zip! past the others glided Mr. and Mrs. Chickadee, wing in wing. They had the advantage, for the reason that their leafy clothing gave Old Man Wind a better chance to push. Nobody envied these two cheerful little folk, until on the shore there appeared a form bedecked in leaves, grasses, and stray feathers, and this was none other than Mrs. Screech Owl, who had intended to return to Humpy's and the tree, with the idea of outdoing Mrs. Chickadee, but got herself fixed up only in time to see the crowd on the way to the river.

Mrs. Screech Owl strutted along the bank until she spied the chickadees, and then her jealousy grew and grew. She shrilly cried that she could skate faster and better than any there.

"My dear madam, come and try!" called out Bunny Santa Claus, winking at Humpy.

Now, Mrs. Screech Owl, having left the Christmas tree before the presents were given out, knew nothing about the nut-shell shoes, consequently she had none. She imagined it was only a matter of going out on the ice and letting Old Man Wind do the rest. She knew she had on plenty

NONE SUCH MINCE MEAT



"None Such is the Easiest"

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We collect and prepare a wide variety of the choicest ingredients that must be used if Mince Pie is to be real Mince Pie. Only the finishing touches remain for the housewife to add.

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You add no sugar to None Such—the sugar is in it

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of things to give the wind a good hold, and she fully expected to whiz past any skater present.

"Watch me!" shouted Mrs. Screech Owl, wobbling out on the ice, where Old Man Wind, with a merry howl, set earnestly to work.

Mrs. Screech Owl went—oh, yes—and she went fast, for a time; but, becoming frightened at her speed, having just passed the chickadees, she foolishly dug her claws into the ice, and the next thing she knew she was sliding over the smooth surface, using her beak for skates, her feet kicking in the air. As she struggled, the chickadees whizzed past her, and a little later, when the wind let go, Mrs. Screech Owl limped to shore, sat down upon a stump, and scolded and cried.

Going to the bedraggled bird, Mrs. Chipmunk kindly helped her to smooth her feathers.

"This is Christmas Eve, and no time for ill will or jealousies," Mrs. Chipmunk said. "Real folks chant to-night, 'On earth, peace; good will to men,' and that means just as much to birds and animals of the woods and fields, for we are all God's creatures. But for your jealousy you would have received a pair of shoes, which would have enabled you to glide as swiftly and as well as the little chickadees over the ice."

THE incident of the screech owl cut short the sport at the river, and the crowd went—Mrs. Screech Owl and all—to a house at the edge of the woods, where they peeked in at a window, upon the merry scene of a Christmas tree surrounded by happy, excited children and grown-ups, under bright lights which slanted their rays out over the snow. As the visitors intently gazed upon the scene, an old-fashioned organ rumbled, everybody inside the house paused at their merrymaking, and out over the stilly night floated the words in song:

"Glory to God, in the highest!
On earth, peace; good will to men!"

Everybody outside stood very quiet, although Mr. Coon and Mr. Badger scratched their heads, Bunny Santa Claus stroked his beard, and Humpy, rubbing his nose, in a very low voice said:

"It was humble Christmas cheer that I offered, I guess; but we should all be happy, for our woodland homes are as dear to us as that home is to those real folks. Let us have peace and good will."

Mrs. Screech Owl snapped her beak, and everybody turned, expecting to hear something hateful from her. Instead, she murmured:

"I may never be able to change my harsh song, but I know now—I know now. I will bear no ill will toward any living thing henceforth!" Then she did a very graceful act. Walking over to Mrs. Chickadee she bowed and, standing in the light from the Christmas tree in the house, said: "You are beautiful and dainty. Your trill is sweet, little bird!"

Next morning, as Mrs. Chipmunk and Humpy were sweeping the snow off their steps, a cheery voice called to them:

"Merry Christmas!"

"Same to you, Mrs. Screech Owl!" Mrs. Chipmunk and Humpy called back.

Good Green Manures

PROFESSOR R. L. WATTS, writing in the "Market Growers' Journal," sums up the fertility problem of the market grower in the following:

"While we have pinned our faith to the use of stable manure in producing good crops, green manurial crops are gradually taking the place of stable manures. It is fortunate that we are able to maintain in this manner the supply of soil organic matter. Let us remember some essentials in the successful use of green manures. They might be given as follows:

1. Soil adaptation. We should be careful to select the right crop for the soil under cultivation, which also fits properly into the system of cropping.
2. Use a bountiful supply of seed.
3. Use sufficient commercial fertilizer to insure a heavy growth.
4. Sow in ample time, especially in the fall of the year, so that the crop will get a good start before winter.
5. Take advantage of every opportunity to grow a manurial crop."

EDITOR'S NOTE: Inquiries on vegetable and flower gardening, fruit, shrubs, and trees are welcomed by our Horticultural Editor. Address F. F. Rockwell, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

where \$1500 worth of vegetables per acre is not uncommon



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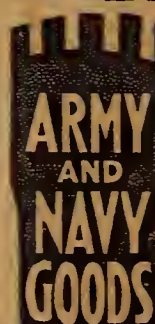
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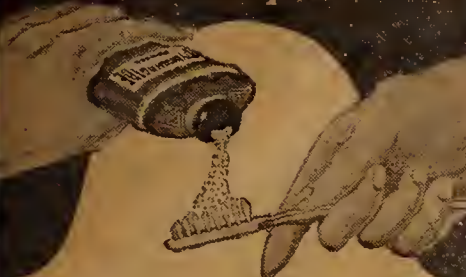
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F. D. GARRISON, Tennessee.

Raspberries All Summer

HOW would you like to have fresh, home-grown raspberries all summer long, up until the first frost? You can. The Department of Agriculture has found a number of late fruiting varieties growing in this country which, when grown with the earlier varieties, make it possible to have raspberries all summer. Two of the hardier autumn-fruiting varieties are the Ranere (St. Regis) and Erskine (Erskine Park). These may be obtained from most any good nurseryman.

A Tractor Solved My Labor Problem

I WAS much interested in reading the results obtained from the tractor questionnaire in Ohio, mentioned in the May FARM AND FIRESIDE. It seems to be the general opinion that a two-plow tractor should not be used where less than 150 acres are cultivated. Many say the tractor does not replace horses, and some claim that it does not reduce hired labor on the farm. Our case may be an exception, but it certainly differs from many that I have heard of.

We have a 10-22, four-cylinder, four-wheel tractor which has proved an entire success with only 100 acres in cultivation. The machine pulls two 14-inch bottoms in any soil, and in our black bottom land could easily pull three. As my father spends the week at his business in town, I have done all the work this spring. (I am just eighteen.) We have not had any hired help this year, and if it were not for the tractor I don't know how I would ever have got all the work done.

We have no need for horses, as the tractor does all the work, with less bother and trouble. On cold days I pour a kettle of boiling water over the carburetor, and it starts as easy as can be. I put a spot light on the machine, connecting the bulb to the magneto, and find it a great convenience. I believe the tractor manufacturers should have suitable lights as standard equipment, for on hot days it is much nicer to work in the evening when it's cool.

I find it costs us about 30 cents per acre to plow or harrow, and in a ten-hour day I can plow over 10 acres with the two-bottom plow. We do not have any trouble at all with the machine packing the ground—in fact, the crop is noticeably better where the wheels have firmed the soil.

We have used the tractor for two years, and have had a replacement bill of only \$3 (fan belt and timer). In hay-making, there is a special mowing attachment which fits on the side of the tractor proper, driven by the engine, so the machine is self-contained and can be operated by one man.

In our case at least, the tractor has proved itself entirely satisfactory on 100 acres, doing away with both horses and men, so that we are independent of hired labor, except during harvest. The question of seasonable labor is the farmer's biggest trouble at this time, and I believe that the efficient use of the small tractor will help solve the difficulty.

R. H. ROWNTREE, Washington.

EDITOR'S NOTE: Our corresponding editors will gladly answer your questions about livestock, dairy, or poultry matters. Give full details, enclosing self-addressed envelope. Address Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Karo



Even better than the
Christmas of olden times is the
Christmas Karo helps to make.

MOST people think Christmas, as we know it, always has been the Christmas we now delight in. Yet they used to celebrate Christmas on the 20th of May, the 20th and 21st of April, and the 6th of January, depending on whether they were Oriental, Greek or Roman Christians.

It wasn't until the time of Julian I, who was Bishop of Rome from 337 to 352 A.D., that the feast of Christmas was celebrated on the 25th of December. Julian won everybody over to December 25th as the accepted day of the Nativity.

The Druids later added the old yule log and the mistletoe—the Germanic tribes the Christmas tree and Kris Kringle—the patron saint of the Spirit of the Gift.

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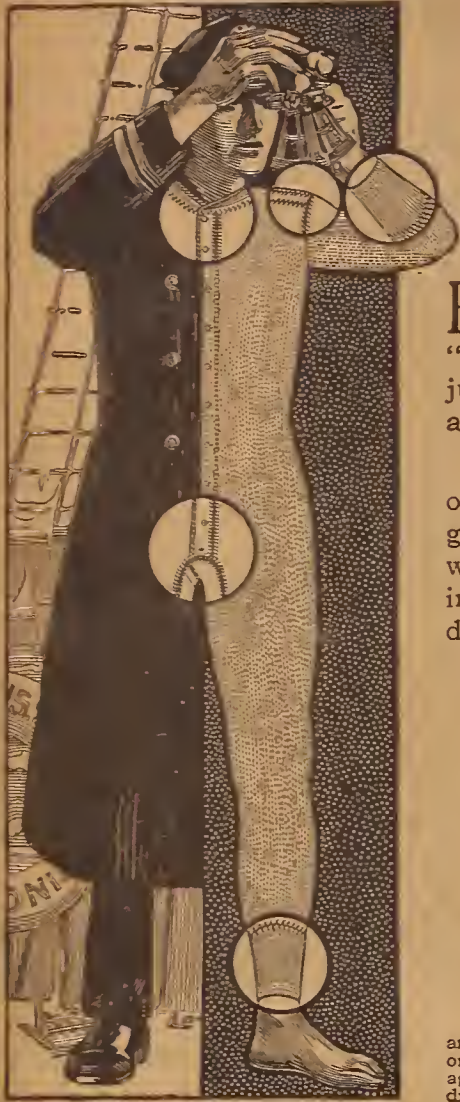
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My Animals Repay Me for My Kindness to Them

By Charles P. Huntington

IT PAYS me in real dollars and cents to treat my animals with kindness. For each minute I spend brushing my heifers, for every moment I spend petting my horses, handling my hogs and chickens, I save valuable time. This perhaps sounds a little far-fetched, but it is nevertheless true.

For instance, take my horses: In the morning I take them out one at a time, hook them up on each side, and groom them. After I have thoroughly cleaned one, I step to the cupboard and give it a lump of sugar, or, if I chance to be out of sugar, I put some salt in the palm of my hand for the horse to lick. All of my horses know that as soon as I unsnap them in their stalls they are going to be groomed, and that they are to receive something which they like. Consequently they come out without hesitation or fear; they stand quietly while grooming is in process; they allow me to handle them without flinching or moving, and I am enabled to do my work in the minimum amount of time.

How many farmers there are who have to keep a vigilant eye constantly on the lookout for a "nip" or a kick while currying their horses! And while that eye must watch for the horse's foot or mouth, it cannot apply itself wholly and without thought to the work of cleaning the horses. Time saved by being kind? Yes, and danger avoided also.

I have watched neighbors trying to catch their horses in the pastures. It is usually a long job, and by the time the animal is captured it is often tired and sweaty from running; its master is in the same condition, with added discomfiture of mind. While this is taking place for a half-hour or so, I can step quietly to my gate and whistle, and my horses will come directly to me, go into their stalls, and be hitched and ready for work while the other fellow is still chasing all over the lot. In this way alone I save at least fifteen minutes every time I want to get my horses from the pasture, besides the perspiration and considerable mental energy expended in saying mean things to the horse.

And because my horses have entire confidence in me—and a horse's confidence cannot be misplaced many times without their remembering it—I can drive them past any sort of a contrivance, and I can back them into the smallest corner or near the noisiest locomotive without trouble. If you do not believe that kindness pays

dividends, just try it. Choose only one horse at first, and see how much time and labor and worry you may save yourself.

Kindness and petting pay equally well with all other classes of livestock. Cows will give down their milk much more quickly to a man who has their trust than they will to one whom they fear. Calves will respond even more readily than will their dams, once they are won over to your side.

One December day when everything was frozen over, and when gloveless fingers would become numb at only a moment's exposure, I had my cattle tuberculin-tested. I had two reactors—a seven-year-old cow and a yearling heifer. At this time I had no hired help on the farm, and found myself obliged to take these animals to the train, load and ship them alone. I let them out of the barn, drove them into the road, and walked quickly by their sides a distance of three miles to the stockyards. The gate was shut, and while I ran ahead to open it they followed close by, walked in, and stood while I again fastened it. After opening the car door I stood at the top of the incline and called them directly into the car. No trouble, no time, and no temper lost. That one lesson was sufficient to teach me what it is worth to have stock that are your friends.

IMIGHT relate similar instances with hogs. All who have ever driven them know what stubborn, ignorant brutes they are when they are afraid and do not know what is wanted of them. I never have trouble in loading them or in driving them anywhere. Why? Because I treat them kindly, and because I spend some time with them when I am not pressed with work. They have never had occasion to doubt me, and because they have never been harmed they do not expect to be.

I find that kindness pays even with poultry. A flock of highly nervous Leghorns will not fly or fuss if they are cared for properly and regularly by one person.

There is almost no limit to the amount of kindness and patience which a man may profitably give to his animals; and, aside from the time saved, one who is kind to animals lives a pleasant, happy life.

IMPORTANT: In order to save time, remember that while our subscription office and printing plant are in Springfield, Ohio, all letters to any of the editors should be addressed to FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

How My Old Professor Surprised Me

[CONTINUED FROM PAGE 11]

my question. "I have seven men, all of them being married. I supply a house and garden for each family. They each have the privilege of keeping a horse or a cow, and I give them each a pig."

The men all seemed contented. Each man has his own work to do, and goes about it as if it were his own farm.

One cannot say that this professor-farmer is not practical. He puts all the theories he ever taught into practice, and since he is a thinker he tries out new theories. His stock wins out in the show

ring and in the stockyard. All branches of his farming pay. His neighbors recognize him as a practical man, and come to him for advice. The state college steals his time to get him to lecture all over the State. He is asked to judge at many shows.

If you were to visit Ravendale Stock Farm and see the success with which the farming operations are being carried out, I don't believe you would agree with the people who say that agricultural college professors cannot successfully operate farms of their own.



Here is Pew's Orphan Bob, grandson of the champion Caldwell's Big Bob—an 800-pound junior yearling of the correct type

One Way to Reduce Your Fencing Bill

By Chesla G. Sherlock of Iowa

THE increased valuation of land, together with the unusual prices of all building material, have created a tough problem for the farmer.

Recently an Iowa farmer decided to build a new fence around his entire farm. When he considered the usual kinds and types of fence posts he made a startling discovery.

"I found," he says, "that fence posts had increased over 300 per cent in price since the last time I fenced the farm."

"I knew that even under the best conditions a wooden post will last only so long, and I saw the prospect of having to re-fence every few years with an increased cost. One thing is sure, and that is that fence posts will never get much cheaper."

"I had no desire to be continually doing over the work at such a cost, as it materially cuts down the profits to have to figure in a new fence every so often. So I cast about for some kind of a permanent post."

"Concrete appealed to me because there was plenty of material available. I found that the cost of concrete posts would not exceed 50 per cent more than oak posts, and their life is practically unlimited. That is, you might say that a concrete post is as permanent as the farm itself."

It is possible for every farmer to make the concrete posts right on his farm, if he so desires, or he may buy the posts out-

right from almost any cement factory. The cheapest plan, however, is to make them right on the farm. Molds can be made according to directions and specifications which any cement dealer will furnish you, or they may be procured from manufacturers of concrete materials.

The Iowa farmer mentioned made his posts 4x4 inches in size, while the corner posts were made 8x8 inches, in order to give them the proper strength to withstand the excessive strain to which they are subjected. Reinforcing, such as heavy wire or corrugated bars, must be used to make a strong post.

For the corners two of the 8x8-inch posts are used, being braced by a section of iron pipe three inches in diameter. The pipe is placed parallel with the ground, and not only will stand a tremendous strain, but will also present a neat appearance.

Such a fence is not only lasting and permanent, but it also adds materially to the appearance and value of a farm.

EDITOR'S NOTE: Our staff of corresponding editors, representing the best minds and broadest experience in their respective fields, is always ready and willing to help you solve your farm problems. If there is anything you want to know about your crops, livestock, farm machinery, poultry, etc., let us help you. Write, enclosing self-addressed envelope, to Editor, FARM AND FRESIDE, 381 Fourth Avenue, New York City.

Your Child's Health

[CONTINUED FROM PAGE 16]



THE above is one of Dr. Emerson's nutrition classes—a group that includes half a dozen nationalities and children from every type of home—from the little boy who has the responsibilities of his family on his shoulders to the son of a famous surgeon who suffered from the ills of the poor little rich children. The causes for the malnutrition of these children show the wide extent and variety of the condition. One was "too tired to learn," another was overstudious. The tea and coffee habit was responsible in one instance, and worry in another. Overfatigue, carelessness of discipline, and inactivity were other basic causes. Putting the children to work together, and giving them the stimulus of class competition, brought them all up to normal weight.

machinery to afford them the relaxation, fun, and healthy exercise that were so conducive to growth and development over there.

There is an old story of an inland farm home from which one son after another ran away to sea. The parents could not understand what there was in their life which led their boys to make this choice. One day a visitor, knowing what had happened, pointed to a picture on the wall of a ship at full sail, which, during the impressionable years of boyhood, had served to set up in their minds the idea of a life at sea as a relief from the monotony and drudgery which the boys suffered in their home.

Possibly there was even more need that those parents should be shown what it was in the home that the boys wished to escape, than the association which offered them the way out. When farm life is disagreeable it is not drudgery alone that makes it so. There is drudgery to be found in the Maine woods or in a mountain camping trip, but the boy has some idea of its meaning, and to some extent it is self-imposed.

It is necessary to awaken the child's desire to have a conscious part in what is being done, and not to take it merely as a matter of routine and obedience. It is worth much to the child to find its parents genuinely interested in the things they con-

sider good for him, and he will reciprocate by taking an interest in their aims and achievements if the home atmosphere is one of cooperation and good understanding.

While yours is the final responsibility in bringing your child up to normal weight, he can be made an active agent in assisting you to put the program through. Put the matter up to him with perfect frankness. Use stories of men like Roosevelt, who was a delicate child, and who accomplished health and growth only by working for it. The child must take a personal interest in the subject. If he realizes that energy is in proportion to chest development, for instance, he will be ready to work out the means to this end.

Appeal to the imagination through reading, and suggest tales of hardihood and vigor like "Lorna Doone" and Cooper's "The Deerslayer." Nothing counts for more than the painting of mental pictures revealing possibilities of strength, force, and attractiveness in such vivid form that the child is ready to work to make them realities in his own case.

When you have adopted your health program, and so aroused the child's own interest that he is ready and anxious to do his part in making it a success, then only are you fully cooperating with that powerful force in nature which makes for health.



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Simply moisten the hair with water and rub it in, about a teaspoonful is all that is required. It makes an abundance of rich, creamy lather, cleanses thoroughly, and rinses out easily. The hair dries quickly and evenly, and is soft, fresh looking, bright, fluffy, wavy and easy to handle. Besides, it loosens and takes out every particle of dust, dirt and dandruff. Be sure your druggist gives you Mulsified.



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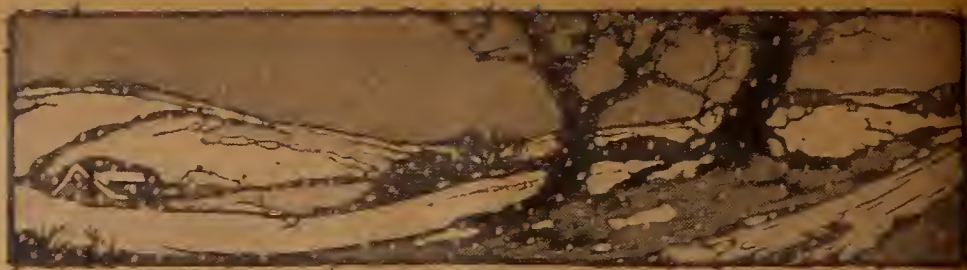
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Comfort - Health



The Immortality of Drake

[CONTINUED FROM PAGE 10]

usual headquarters on such trips. Odd that Master had not mentioned the beast by name—but those emphatic tones referred to a killing on the morrow, that was certain!

"You ain't no sheep killer, Drake," went on his master. "No critter could sass you like that ram-goat done, without havin' tu eat his insults. I don't blame yu a bit! The doctor'll see it that way, when he's had time to think. 'Twarn't your fault, Drake-dog. No-sirree-bob!"

Drake pricked up his ears. He didn't quite get the drift, but show him a fresh piney-hawg track and you could depend on him! He watched Master interestedly as the man swept away the coals from the hearth and spread out a circle of green oak leaves. On them was dumped the moist corn cake from its pan, and the heat immediately curled the leaves over the top of it. Raking a layer of ashes over them, Gosh heaped up a pile of live coals and then lit his pipe with one of them.

"Yes, suh, Drake," he continued between puffs, "you may be a mistake, but yu sho' is the dearest of all ma dawgs tu me!"

The "mistake" reference was to Drake's ancestry. His mother was an enormous Irish wolf hound, imported by the doctor ten years before in the early stages of his various experiments. There had been a mesalliance, but Drake had received his aristocratic name before the taint in the litter of pups had been discovered. Drake had then been begged for by Gosh, and the rest of the litter drowned. Distemper took the mother before her next litter, so Drake had been the sole survivor of that venture. Raised by Gosh from a clumsy, waddling pup, he had been the one big pride of the hunter's life. He was just like his mother all over again, except for certain defects that only a fancier could discern, and the trait of running mute that the unknown interloper—probably a shepherd dog—had given him. But to Gosh he was the dog of dogs. No better boar or bear hound ran on four legs, if you asked him! To Drake he owed half his living, for piney hawg drew nine cents a pound when sold to the gentry of the neighboring plantations, and there were plenty of them to sell, even after his feudal obligations to the doctor's own smokehouse had been discharged.

"You is royal-blooded, Drake! Wuth any twenty of them furrin rams—the doc'll realize that too, when he cools down. Perk up, dawg!" he chirped, seeing that Drake's ears had fallen somewhat over the minor tones that had crept into his voice. "Ah reckon the ash cake's 'bout raidy."

He swept off the live coals and pulled out the charred bundle of leaves. Peeling them off, a glazed surface, dusted with white ash, came to view. He washed it off carefully, and broke the steaming bread, tossing great chunks into Drake's huge jaws. The bony remnants of the quail, more plentiful than their meat, were disposed of the same way, and then Gosh went out into the clearing to think, leaving Drake dozing before the fire.

HE RELIT his corn cob and sought a convenient stump. He knew that he had not faced this whole problem fairly and squarely, even yet, but was building on the vaguest hopes of the doctor's relenting. The round red moon rose, enormous through the trunks of the cypress, and the hoot of a barred owl and the squall of a raccoon came from some distant fastness of the swamp, as the man sat buried in thought.

"Ain't no man kin make me kill ma own dawg, nohow!" he declared, soliloquizing to himself. "Ah knows dawgs as no one else in this county knows 'em. Some's jest dawgs—jest animals. But when a dawg grows up with a man, like Drake has, lives with him day by day, thinks as he thinks, feels as he feels—Gawd, man, that dawg grows him a soul! Ain't I seen it? Look at Drake, here—fed and raised with me from a puppy. Part of him's jest dawg; but part of him, an' the biggest part, is

more than dawg. Danged ef it ain't a part of ma own soul, growed oveh into him! Danged ef it ain't!"

He ruminated pleasedly for a while on this novel theory. To Gosh it explained a good deal that had been mysterious in his dealings with his own dogs: their capacity to read his thoughts like a medium, for one thing; their intense partisanship with him, for another; their utter devotion and sympathy—why, otherwise, should a creature of a totally different order of nature be wrapped up in human joys and sorrows as to become a veritable reflection of his master's state of mind, as does his dog? Who are we, to these beasts of a lower order even than the apes, that they should be so mindful of us, unless our dog really bears part of our own soul through his tour of life with us?

"It's nat'ral that it should be!" insisted Gosh to himself, after further reflection. "We does sho'ly transplant part of ourselves into a critter that we love as I do Drake-dog. Ef I shoot him, Ah kill part of maself—mebbe the best part!" he grinned momentarily. "No, suh, Ah jest nat'rally cayn't do it!"

THEN he thought on the other horn of this dilemma, his loyalty, his duty to Brevoort. His father had served Brevoort all his life; his grandfather had fought for her. They had all been born there, raised on the plantation. He himself had never gone out of the county expect for an occasional trip to Piedmont with a load of game for the Town House. But Drake had killed the doctor's imported ram, and ruined a cross-breeding project that might have meant much to the future of wool-growing in the South. There was no guarantee—except his death—that he would not do it again. Who was Gosh and his dog to stand in the way of a momentous agricultural experiment like that? If this hot-country sheep could produce a strain that would thrive in the South, and yet yield wool equal to the best Northern-grown—

"Dag-gone it all!" he muttered exasperatedly. "Ah never was so worried in ma life! Ah've either got to shoot him or cl'ar out!" A kind of terror seized him. To leave the friendly protection of Brevoort and go out into the cold world, a wanderer, a woods savage—and all for a dog! Every big plantation had its own hunter; even if he could find a vacancy, how long would he last at it with Drake and his sinister reputation following him? "Jest the same, Ah ain't shootin' him, nohow!" he averred resolutely. "I'll go tu trappin' for a livin', fust. We'll lay low. Mebbe Ah'll think of somethin'."

But even sleeping on it failed to produce any satisfactory solution. Drake must go to end this menace, once for all. There was no other way. Next morning at dawn while they were preparing breakfast before the day's hunt, a peremptory messenger from the doctor reached him. A little nigger suddenly appeared at the door of the shack, poked in a folded note, and ran off before Gosh could collect his wits to stop him. He opened it:

Doc says shoot Drake or clear out. He's wild. Better do it quick and come back and eat crow, or he'll sack you, anyhow.

J. EDSALL.

It was from the overseer. Cowardice, the first Gosh had ever known, assailed him. To be deprived of the doctor's friendship and patronage, to be driven from Brevoort, to be jolted out of his easy game-keeper ways and have to fight into the fierce competition of trapping, with its uncertain returns and its certain fights with men already in possession of all the good trapping grounds—he felt as if all the pro of his life were being pulled out from under him. It was easy to fall in with the doctor's point of view—that Drake was an intolerable nuisance, an impediment to progress on the plantation that would have to go, just as would a pet bear if Gosh had taken into his head to raise one. The doctor had never forgiven Drake for not

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running true to strain; it had only been
Gosh's wheedling importunities that had
saved him from the fate of the rest of the
litter. Why not take the common-sense
view of this matter? The doctor was the
most genial of feudal lords, adored by all
the niggers, looked up to by the neighbors,
respected by his white employees, from the
overseer down. He was never unjust. If
he saw that it was necessary to get rid of
Drake, why oppose him? To send him
away would not do; they had tried that
once—shipped him two hundred miles,
only to have him turn up a week later,
gaunt and ribby, but pathetically glad to
see them again.

No, the only way was to—
Gosh slipped a couple of ounce ball
cartridges into his gun and chirruped to
Drake. He would pretend that they were
going after piney hawg, and then, when a
good chance came—

"Here, Drake! Hie on! Ssuey, pup!
Go git 'em!" he called, waiting on the
porch for Drake to dash out to the hunt.
No response came, and he stopped, aston-
ished, to look in at the door.

IT WAS uncanny! The dog lay with his
great brindled head erect, but his fallen
ears and the troubled expression in his eyes
told Gosh instantly that the dog had read
his mind. He did not offer to budge, as
Gosh strode in and laid hands on his collar,
and it took a deal of coaxing to even get
him to his feet. Standing thirty-six inches
at the shoulder, Drake could have killed the
man, right then, with a single snap at
his throat; instead, a look of deep humility,
of pitiful worry and fear hovered in his
brown eyes. Was this the Drake that used
to dash out to the boar hunt with a frantic
eagerness, utterly unrestrainable until he
had capered off a surcharge of high spirits
in the first wild rush out of the cabin door?

Gosh's heart smote him as he slipped on
a leash. He felt that Drake could and
should have killed him, then and there, for
the treacherous thoughts, the odious pur-
pose that lay back in his brain. Instead,
the dog slunk resignedly along, trembling
in every limb, glancing up woefully at his
master, a wondering, piteous expression in
the honest brown eyes that spoke his soul
out under the shaggy brows.

"Gawd! He knows I mean tu kill him,
as well as I do!" shivered Gosh to himself.
"O Gawd! O Gawd! Forgive me! I'll
neveh do it!"

Fearful to fail in his resolution, he made
haste to tie Drake to a small long-leaf pine
sapling at the edge of the clearing. Then
he sought the depths of the cane, where an
ambush could be had, and Drake would
never know the instant of his death.

In vain! The dog's eyes followed him,
seeming to penetrate the thickest hiding
places. When the tubes were finally leveled
on him, with quaking arms, they looked
right into those unflinching yet pleading
eyes, it seemed to Gosh, as if with a tele-
scope. Drake faced him, with ears fallen,
with a sacrificial humility of soul streaming
out of those yearning eyes that had never
looked at Gosh before with any other ex-
pression than that of adoring love. An air
of self-sacrifice shone about him, as if say-
ing: "Here am I, Master. I do not know
why this is being done to me, but if you
know best, then do it! My life, my soul,
my all are yours!"

GOSH lowered the gun.
"I cayn't! Gawd in heaven—I cayn't do
it!" he groaned through his tears. "I ain't
no murderer! Drake! Drake-dog! For-
give me, ole pardner! Forgive me!" he
wept, dropping the weapon to burst
through the cane and fling his arms around
Drake's big rough-coated neck. "Never!
Drake-dog, never!" he sobbed, while
Drake's tail swished soberly in the broom
straw and he licked at Gosh's face solemn-
ly. There was still a pained expression in
his eyes. In his doggy heart he could not
fathom all this at all; but Master was in
deep trouble, and he himself was some way
mixed up in it—that was certain.

"We'll cl'ar out, honey! We'll leave
Brevoort foreveh. We two kin make a
livin'! C'mon, boy! Hip! Sssuey!
We'll git the doctor a piney hawg and
then, daggone him, we're quits with him!
Hie on, dog! Sssuey!"

Their ancient war cry now seemed to re-
assure the dog completely. Master's trou-
ble, whatever it was, was over; they were
really and truly going boar-hunting this
time! Oh, but a dog can read the human
voice tones! Gosh's rang true, now—no
faintest hint of hypocrisy—and Drake
started off confidently into the swamp,
worrying not at all that Master had repos-
sessed himself of his double gun. They
crossed the branch on a down tree, and
gained an uplands of bear and turkey oak,



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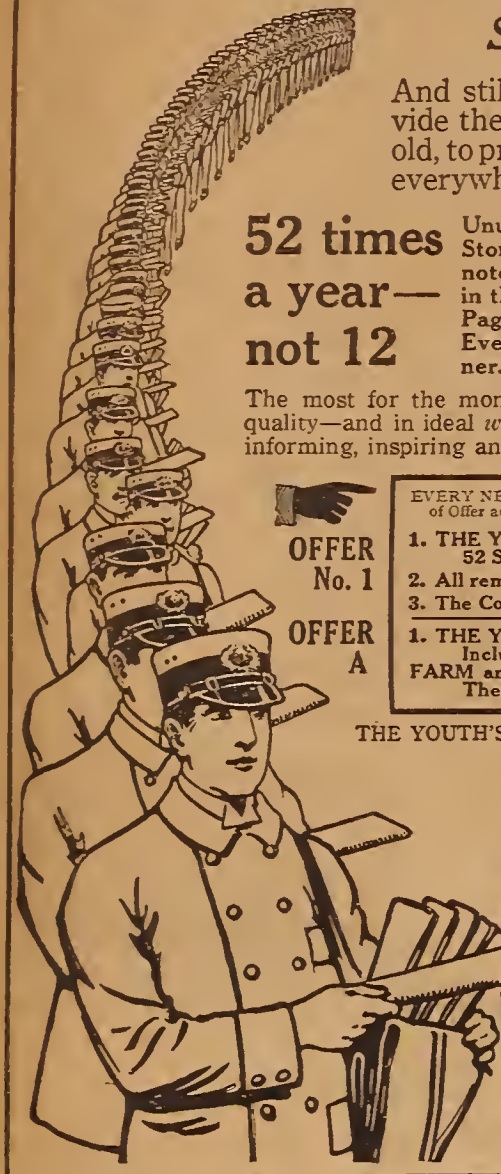
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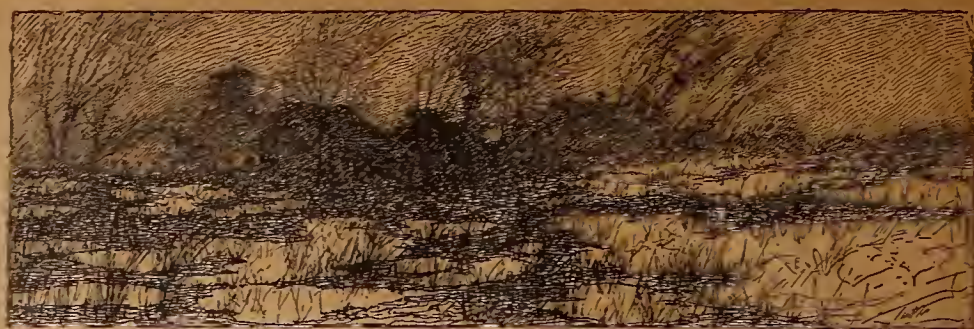
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small, scrubby trees whose plentiful crop of small acorns strewed the wire grass. Here, at night, the wild boars came out to feed, retiring by day into the deep fastness of the swamp. Gosh strolled along, just outside the brier border of the branch, Drake quartering the high ground assiduously, his immense, iron-gray shape loping across Gosh's watchful eyes, and now and then stopping to look back for a reassuring wave of Gosh's hand. In his poses his immense fuzzy head resembled some super-Airedale.

SUDDENLY he dashed off down a narrow, muddy game trail toward the swamp. Gosh started to run at once, for in the mud of the trail he saw the fresh, cloven-hoof prints of a wild boar. Drake disappeared into the cane, silent and vengeful, while the man tore after him, his breath panting, his heart thumping so that he could hear its beats through his open mouth. It was silent team work that they both understood well. There were rustlings and dashings hither and yon in the dense, thorny undergrowth; and then, somewhere on ahead, came the rapid, volleying bark of Drake at the attack. Gosh pressed on, cursing his way stubbornly through thorny vines that raked him, and crossing the winding creek twice on precarious bridges of cypress knees and prone water-ash saplings. To the constant barking ahead was now added the angry, animal squeals and grunts of the boar, and a rank, musky odor pervaded the forest. Gosh judged that he was on the wrong side of the creek, and forced his way out through a thicket of bay bushes that overhung its deep, rapid stream. He leaped for a mossy cypress knee in midstream, and was making the other bank with his momentum, when a rosy vine encircled him about the waist and hurled him backward into the water.

"Hold him, pup! Sssssuey!" he yelled, floundering madly out of the embrace of the vine. He crawled up the banks and burst through the cane—to face the boar, not thirty feet away, at bay and slashing with his long, sharp tusks at the agile Drake. The hog was all of six feet long, huge and shiny black, with long coarse hair that covered invulnerable shoulder plates more than an inch thick. A high-power rifle simply left no chance at all to the man who fired it at this range—the boar would surely charge, and his tusks disembowel the hunter before the bullet could shatter his vitality. But the smashing blow of an ounce solid ball usually knocked the creature down to stay.

GOSH leveled the tubes on the raging boar and the roar of his right barrel rang out. The boar squealed a furious challenge and started for him, Drake springing in, and seizing an ear to hold him back. Gosh steadied himself and planted the sights full on the thick, hairy chest, under the gleaming pig-like eyes that burned over wicked, slaving jaws. At ten paces he fired. Malignant fury glared in the pig's eyes—he was charging to kill,

still coming on with the last ounce of his vitality. Drake loosed his hold on the ear and made a desperate snap at the boar's foreleg to trip him. Fatal move, and the dog knew it! With a savage slash of his head, a long glistening white tush went home into the dog's side, and there was a horrible sound of ripping and tearing, of snapping and breaking ribs, as Drake yelled in agony.

Gosh whipped out his smoking, exploded shells and frantically shoved in fresh ones, snapping the gun shut and firing both barrels from the hip. The boar rocked from side to side, grunted, sighed, and lay over, kicking feebly.

Gosh rushed forward, sobbing with sickening anxiety, and flung himself on giant Drake, who lay gasping, with stiffened, convulsive legs, on the moss. Drake looked up at him, the life-light dimming in his eyes, while he feebly tried to lick the tears that rained down his master's cheeks. He was ebbing fast, but to die thus, looking in humble adoration up into the eyes of the man he had loved all his life, seemed contentment. Gosh had no words. Sobs of anguish, despair, impotent regret, shook his frame. It seemed that part of his own soul was being torn out of his body. He bent his head down and smothered Drake's leonine one in a frenzied hug, clasping the silken face of his dog tight in his arms, as, with a faint shudder and a last, feeble thump of his loyal tail, Drake passed on.

FOR a long time Gosh made no move. He could not believe that Drake, his Drake, the superb, the magnificent, was—dead. The body was still warm; it moved limply. Surely some faint spark of life still smoldered somewhere in that great frame! The hot sunlight streamed down through the whispering cypresses, and still he had not moved, had not relinquished the loving clasp of that royal head in his arms. Gosh had never heard the story of Drake's own forebear, Gelert, but surely all the pangs of King Llewellyn were his!

The red life blood had long since ceased to ooze from Drake's torn side, and a certain stiffness had set in in the limbs, before Gosh finally stirred.

"Good-by—ole pardner!" he whispered huskily, his lips quivering as he tried to form the words. Reverently he covered the poor form with green bay leaves, and then, without a single glance at the boar, picked up his shotgun and started for Great House.

During all that march he did not trust himself to utter a single word, for it had brought a flood of tears. As he came up to and started to enter his own cabin, heedless of the vociferous welcomes of the dogs, the overseer came around the corner of Great House veranda.

"You, Gosh!" he called out. "Whar's Drake?"

"He's—daid," choked Gosh. "Died—like a—hero—," and with a sudden spasm of emotion he dashed into his cabin bedroom and flung himself face downward on the couch. (THE END)

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Under such conditions it would be folly to take furs before cold weather improves the quality, and it may pay to trap lightly all season, taking only high-priced furs. If left alone, the fur bearers will increase and make good trapping next year, when prices are likely to be better. It is possible that the high peak of 1920 will not be reached again for many seasons.

This is the situation at the time this is written. It will pay you to investigate this matter carefully before putting valuable time and money into a business which looks as though it would be very unprofitable this season.

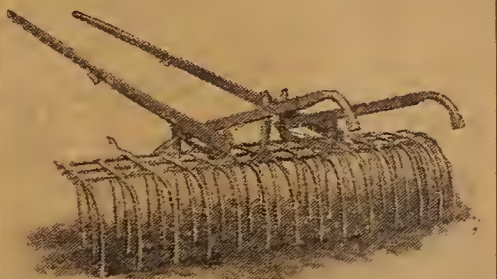
If you should want further information, write to Trapping Service Bureau, FARM AND FIRESIDE, 381 Fourth Avenue, New York City. THE EDITOR.

Is the Horse Weeder Forgotten?

THE two-row horse-drawn weeder seems to be one of our farm tools, popular for a time and then discarded. I often wonder why this tool isn't used more than it is. I use one myself a good deal. Of course, there are seasons of excessive rains which make the use of any light surface working tool unprofitable. Outside of such a season I have found I can't afford to leave my weeder in the tool shed.

I like it particularly for the first or second workings of corn. Running the harrow over the corn is a popular way just now, but if the soil is in condition for this work I prefer the weeder. I can take a team and, by changing the horses, get over quite a bit of ground in a day. It takes two rows at a time. It doesn't dig all the time, like the harrow, unless you want it to. It is light, and can be half carried in turning the ends of the rows, so that the horse can miss the corn hills. If stalks or other refuse get under the teeth, you can lift the whole frame and let it pass out. This saves corn sprouts.

I use this weeder for working the clover seed in oats or wheat, unless I drill when the oats are drilled. It is just the thing for potatoes. It makes them look bad for a few hours, but they recover by the following morning. I use it for strawberry plants too. On warm days it will run over a field of tomatoes and stir up the soil in fine shape. EARL ROGERS, Ohio.



This is Rogers' weeder

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IMPORTANT: All questions about farming, Better Babies, American Legion, etc., should be addressed to the Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

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Why the Udder is Important

By Earl Roberts of Ohio

A COW'S udder is a very delicate organ, and very sensitive to abuse. I had a cow that the horses chased for a short distance, and her udder in flopping from one side to the other became bruised, and it was ten days before it got back to normal.

The udder is composed of four separate parts. The milk does not filter through or in any way go from one quarter to the other. Hence, one quarter might be wrong without directly affecting the others.

I am inclined to place more value on the length and width of an udder than I am on the depth. To get length, an udder must commence high behind, and extend well up on the belly. Width depends much upon the conformation of the hind quarters—the inside of the thighs curving out to form a spacious arch, the widest part at the top, within which hangs the udder, free and easy.

To be well proportioned, each quarter should be uniformly developed, otherwise we may have what is known as a tilted

udder—too much extending beyond the thighs behind. This is very objectionable, as it comes in contact with the excretions of the cow. The same is true when the udder hangs too low, for it must necessarily catch more or less dirt. And nine times out of ten cows with such udders are poor producers.

There are many faults to look for in selecting a milch cow. If her teats are too small and too short, we have an aggravating fault. Then, again, they might be ill-shaped and of a thick, fleshy nature. Such teats are hard to grasp, and the cow is very tiresome to milk. Large udders are often misleading. A large, fleshy udder, firm in texture, many times will not equal one that is half its size whose texture is not nearly so heavy and whose tissues are of superior quality.

A producing udder, large or small, should be light and spongy, the skin soft and pliable. After milking, the walls of the udder should hang in loose folds.

A Water Gate That Stays

By W. R. Landis of Oregon

ONE of the difficulties met on most every farm is in building a fence across small running streams that can be put up at small expense, and that will stand through the winter freshets. The usual fence is the board, rail, or wire structure which is hung on perpendicular posts. There is always trouble in holding these posts in the bed of the stream, and if the board or wire covering is set too close it will not allow the water to escape easily.

The fence seen in the illustration is one which has given us good results for several years, and with practically no upkeep cost. It will easily fence anything on the farm, and it should be built in the same manner for all kinds of stock. The size of the cross timbers will depend on the size of the stream and the drift that is carried by high water.

For a small stream the cross timbers should be about six or eight inches, and the panels from an inch and a half to two inches thick. The space between the panels should always be about two inches. A wider space will allow drift to lodge between the panels instead of resting against the fence, as it should. Setting them close has saved us from broken panels, and the debris can be cleared away in a few minutes.

The cross beams can be made of any small scrub timber that is handy, and the panels from limbs or small saplings. With an ax you can make a smooth surface on each end of the panel so it will lay flat

against the cross timbers, where it can be securely spiked.

Anyone can build this water gate with the use of a few spikes, an ax, and some scrub poles. It can be done cheaper than with any other material; it will last as long, and will give less trouble and better results. Squared material was used in the above fence because it was on hand at the time and lumber was not selling as high as it is to-day. Round wood in the bark is not only the cheaper, but it will also probably give a trifle longer service, and makes a rustic piece of work that is nice to look at.

I know farmers who have hauled high-priced wire and lumber for eight or ten miles from town and used a lot of it in just such places. After his fences were built the owner was always working around them, for this is always where the

stock is likely to get out.

The driftwood which is seen lodged against the fence in the illustration is the accumulation of the past winter. When the water was high, all the drift easily cleared the fence, since it is built with the top sloping down-stream at an angle of about 40 degrees. This allows the water to drive easily any floating debris over the top, as it will slide up the close-set panels.

Similar fences make good guards for small culverts. In this case the panels are of stronger material and are set much wider apart, the intention being to catch and hold any floating roots and timber.



If you have a stream that is hard to keep fenced, a water gate like this might solve your problem



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One City Stopped Milk Profiteering



Samuel A. Carlson, mayor of Jamestown

THE city of Jamestown, New York, is trying something unique. It is establishing a municipal milk plant to pasteurize, bottle, and distribute the 18,000 quarts of milk used daily by its 40,000 inhabitants. The taxpayers, in an election held August 21st, voted to bond the city for the sum of \$150,000 to erect such a plant, the bonded indebtedness to be paid off, at the rate of \$5,000 annually, from revenues derived from the operation of the plant.

This is the first American city to try such a plan, and the experiment will be watched with interest. Mayor Samuel A. Carlson claims that, since the milk supply affects the public health, "it must be taken out of the element of exploitation and made a matter of public service."

Not all the citizens of Jamestown are for it, nor are all the milk dealers and producers. Some legal minds ask whether bonds can legally be sold for such a venture on the part of the city, and others ask whether it will work. However, Mayor Carlson says he can make it work just as he has made the city's water and light plant, hospital, and market work. All these municipal enterprises were his idea, and he has worked ten years to get the taxpayers to consent to the milk-plant plan.

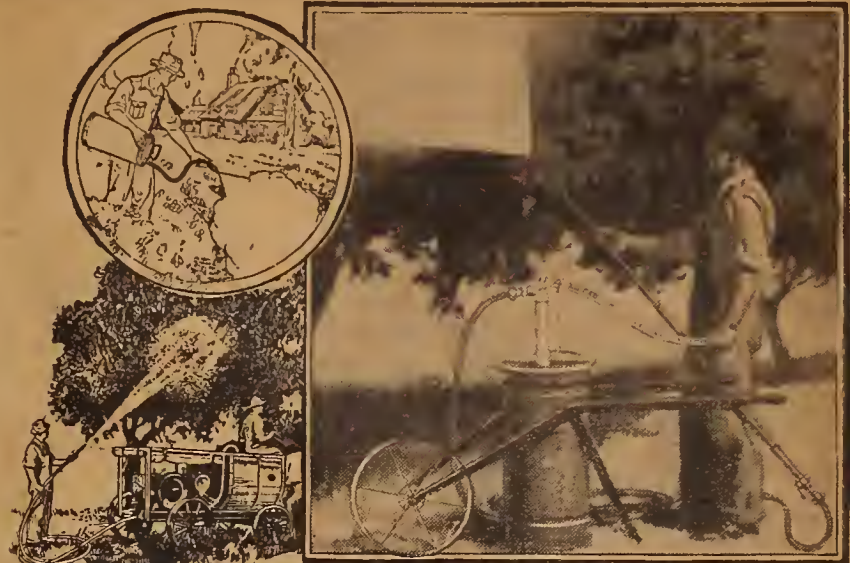
ALL advocates of the plan agree that the quality of milk will be improved, and some believe that the price of milk to the consumer can be stabilized, and possibly reduced. They point out that seventy milkmen now scurry about the city delivering milk, whereas the city, by establishing districts, will do the work with twenty-five distributors. It is also pointed out that the producer will have the satisfaction of a steady market the year round, and that any possible future milk shortage, because of milk condensary competition, will be eliminated, by reason of the fact that the city will be as attractive a customer.

Milk is now selling in Jamestown at 13 and 14 cents a quart for the grade most commonly used. In July the distributors raised the price from 12 to 15 cents. They were paying the producer 8 and 8½ cents when they did it, and made the advance upon the strength of a cent's increase to the producer. A federal grand jury said they had violated the Lever Act, and a government attorney allowed them to lower to 13 cents to escape indictment. This they did, but later some raised the price to 14 cents. Distributors say they cannot make sufficient profit now, with the price at 9 cents to them and 13 cents to the consumer, and a number of the dealers are said to be for the plant.

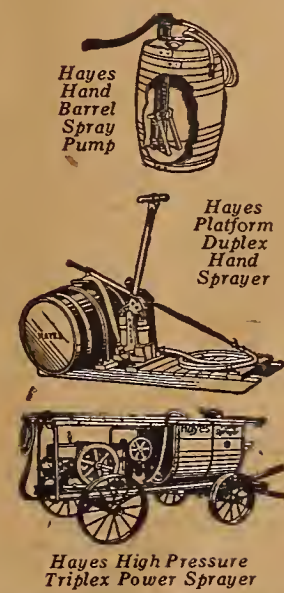
The milk question has had a thorough discussion in Jamestown. It is proposed to start work on it at once. PAUL A. DAVIS.

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"In Switzerland, members of the labor unions demanded another increase in wages, at the cost of the farmers, and threatened a general and destructive strike. Whereupon the farmers mobilized and armed one hundred thousand of their number, and the strike collapsed. This is the statement of a radical Socialist daily published in Paris.

"Let us bear in mind," says this paper, "that we must not make enemies of the farmers."

"In Russia the farmers refuse to join the Socialists in their bloody, destructive, and suicidal programs. The farmers of Russia are deadly tired of arbitrary rule, and what they want is a law-abiding organization which, in the ordinary parlance, simply means order. It is the farmers who have suffered most because of the disorder in towns, everywhere.

It is the farmers who most keenly realize the folly of the present new thought and the idealism that prevails in literature. The farmers have broken many destructive revolutions, and are the hope of the world in the present emergency."

Seems to me, Ed Howe must be about a million years old. As far back as I can remember, my folks in Falls City, Nebraska, used to read the "Atchison Globe" Sights and talk about Ed Howe, the writer of them, who once lived in Falls City. Even in those days he was accounted a pretty smart feller in that part of the country, and I'm glad to see that that local judgment is being verified by the whole country.

'Rah for You, Jake!

I have held this letter over till winter because I was afraid that if I gave it to you along with the hot weather it might be too much. Mr. Yocum nearly fainted when he read it, but Jacob vouches for it, leaving me nothing to do but to put it forth just as it came from the pen of Jake Longanecker, himself, at Roanoke, Louisiana:

"Some time ago you had one page about fishing. I will tell my luck in fishing. I am seventy years old.

"Some time ago I went fishing for catfish. I had four poles, with three hooks on each line, and they bit faster than I could take them off. I fished two hours, then I had 80 fish, weighing 1½ pounds apiece. Then I threw the four poles out on the grass, and there were twelve catfish on the four poles.

"Another time I caught one catfish that dressed 15 pounds with head off and skin and entrails out.

"Then I hooked an alligator lacking one inch of six feet long. I pulled him up with the line till the head was on top of the water, then I shot him between the eyes, and pulled him out. You know when Roosevelt was here in Louisiana, they fed him on alligator, so I skinned him and used the tail for meat. And, say, it was as good as any catfish. He weighed 80 pounds, but we only used the tail.

"JACOB LONGANECKER."

Now take a long breath and go on to the next item.

Mule Sense

We hear much talk of "horse sense," but if one of Wayne Dinsmore's cute little letters that he writes to folks from Chicago,

in pursuance of his duties as secretary of the Horse Association of America, is to be believed, mules have better sense than horses. He writes to point out that the new census shows that mules are increasing faster than horses, but the interesting thing to me is his discussion of mule character, to wit, as follows:

"The mule is the only fool-proof motive power unit. They can go out singly or in pairs, fours or sixes, and after a full day's work return home all right, whether the driver does or not. In these days of irresponsible labor that is a big factor.

"Then, too, a driver cannot overheat a mule. When he gets too warm he slows up to a gait befitting the weather, and not even the fluent vocabulary of an ex-cavalryman will persuade him to greater speed. Brought in at night, it is sufficient to pull the harness and turn this long-eared believer in "safety first" into a big dusty barn lot with food and water. He will roll until he is groomed to his own satisfaction, and will not drink nor eat till cooled down enough to make it safe to do so. No matter how much grain is accessible, he will stop eating when he has enough.

"Long live the mule! (He does it anyway.)

"Prospects now are for a greater demand and higher prices for good mules than ever known. Fortunate is the corn-belt farmer who has a pair or two kept to handle his peak-load power requirements of summer months. He will be able to sell them this fall at a substantial advance."

Well, Mr. Dinsmore, if what you say about the mule is true, we have a lot more respect for his good sense than we have for our own, sometimes.

Isn't It Terrible?

C. H. of North Carolina sends us the following flabbergasting information, culled from the always interesting columns of the University of North Carolina News Letter:

"At a recent meeting of the American Public Health Association of New York, Dr. W. S. Rankin, the president, made some startling statements with reference to the physical and mental health of the population of this country.

"Of the 110,000,000 citizens of this country, 45,000,000 are physically imperfect; 15,000,000 die annually; 3,000,000 are in bed all the time, 1,000,000 have tuberculosis; 2,500,000 contract venereal diseases each year; from 2,000,000 to 3,000,000 are cases of hookworm and malaria; only 37,500,000 are fairly healthy, and 19,500,000 are in full vigor.

"With all our vaunted support of higher educational institutions, it is interesting, perhaps surprising, to find that there are more persons in the insane asylums in this country than in all the colleges and universities. It is also estimated that the former cost more to maintain than do the latter."

Well, C. H., I have no doubt that their statements are perfectly true. But what of it? Parading them around just makes us feel bad, and there's not a blamed thing you and I can do about it, except take care of ourselves individually.

Besides, it's misleading. What if there are more people in insane asylums than in colleges? People go through college, but they stay in asylums.

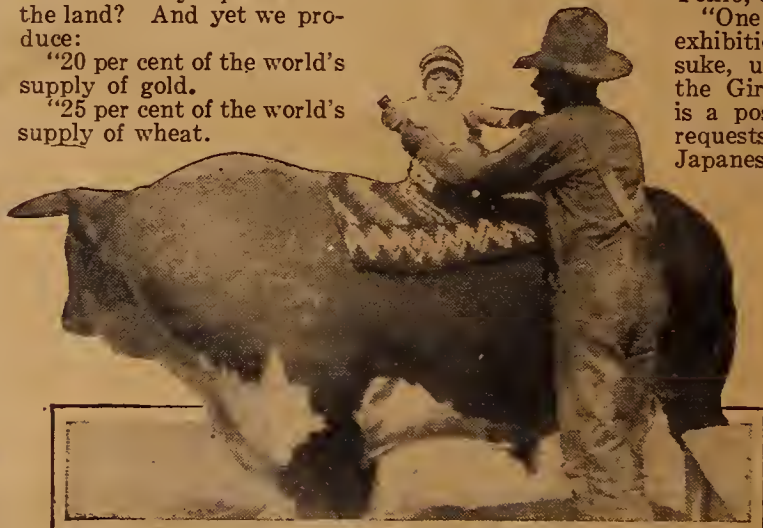
And why shouldn't it cost more to keep the insane? College students can take care of themselves.

Perfectly dreadful, isn't it? And yet, after all, F. B. sends us the following interesting clipping taken from the "New York Sun," which looks on the other side of the shield and makes us feel better again:

"Do you know that the United States has only 6 per cent of the population of the world and only 7 per cent of the land? And yet we produce:

"20 per cent of the world's supply of gold.

"25 per cent of the world's supply of wheat.



"Dear Sir: I am sending you a picture of my little nephew on the back of my \$6,000 Hereford sire Domino No. 590,760." Thus wrote W. R. Hayes, herdsman for R. L. Faulhaber, at Brownlee, Nebraska, and we think nephew, bull, and herdsman are all fine

"40 per cent of the world's supply of iron and lead.

"40 per cent of the world's supply of steel.

"40 per cent of the world's supply of silver.

"50 per cent of the world's supply of zinc.

"52 per cent of the world's supply of coal.

"60 per cent of the world's supply of copper.

"60 per cent of the world's supply of cotton.

"60 per cent of the world's supply of aluminum.

"75 per cent of the world's supply of corn.

"85 per cent of the world's supply of automobiles.

"We also refine 80 per cent of the copper, and operate 40 per cent of the world's railroads.

"Before the war we owed other nations \$5,000,000,000. We have not only paid this debt, but foreign nations now owe us \$10,000,000,000, and we hold the largest gold reserves of any nation in the world."

Wifely Wants

Well, it seems that husbands and wives are pretty much the same the world over. Of course, you farmers who read this, I don't know whether it strikes a reminiscent chord in your married mind, but it certainly had a familiar smack to me when I read this wifely cry from far Japan, published in the "Advertiser," a newspaper of Tokio, Japan:

"One feature of the diligence exhibition at the Ichigayamitsu, under the auspices of the Girls' Industrial School, is a poster setting forth ten requests that are made by a Japanese wife to her husband.

The poster reads as follows:

"1. Please get up at the same time I do.

"2. Please do not scold me in the presence of visitors or the children.

"3. When you go away from home, please tell us where you go.

"4. Please let us know when you go out and when you come in.

"5. Please grant me the privilege of a few of my wishes.

"6. Please give

me a fixed sum of money for my personal use.

"7. Please do not demand attention from others for things you can do yourself.

"8. Please refrain from doing things before the children which set a bad example.

"9. Please allow me certain hours for reading and studying.

"10. Please stop saying, 'Oi, kora,' when you call me."

"At the end of these requests was a short note which read: 'This may sound rather abrupt, but it is the expression of a sincere feeling of your wife.'

"Another poster which attracted considerable attention is a tabulation of answers to questionnaires inquiring what is the dearest wish of women. The following answers were received:

"980 out of 1,000 desired to have new clothes; 720 out of 1,000 wished to go to the theatres and other such amusement places; 150 out of 1,000 wished to live on especially good food; 100 out of 1,000 wished for happy homes; 50 out of 1,000 desired to travel; 30 out of 1,000 wished to accumulate money."

I guess that's enough for this month.

A Merry Christmas and a Happy New Year to you all. It will be 1921 when we meet again.

George Martin

FARM AND FIRESIDE

The National Farm Magazine

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You are invited to ask questions of any or all of these people in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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You get longer wear from your Rubber Boots or Arctics when they bear the Red Ball Trade Mark.

You get satisfying fit and real comfort—feet dry and ankles warm, after you have worked all day in snow, slush, or oozy mire.

Look for the Red Ball when you buy Light-Weight Rubbers, too. “Ball-Band” Rubbers are shapely, good-looking, and you can get them to fit any style of shoe.

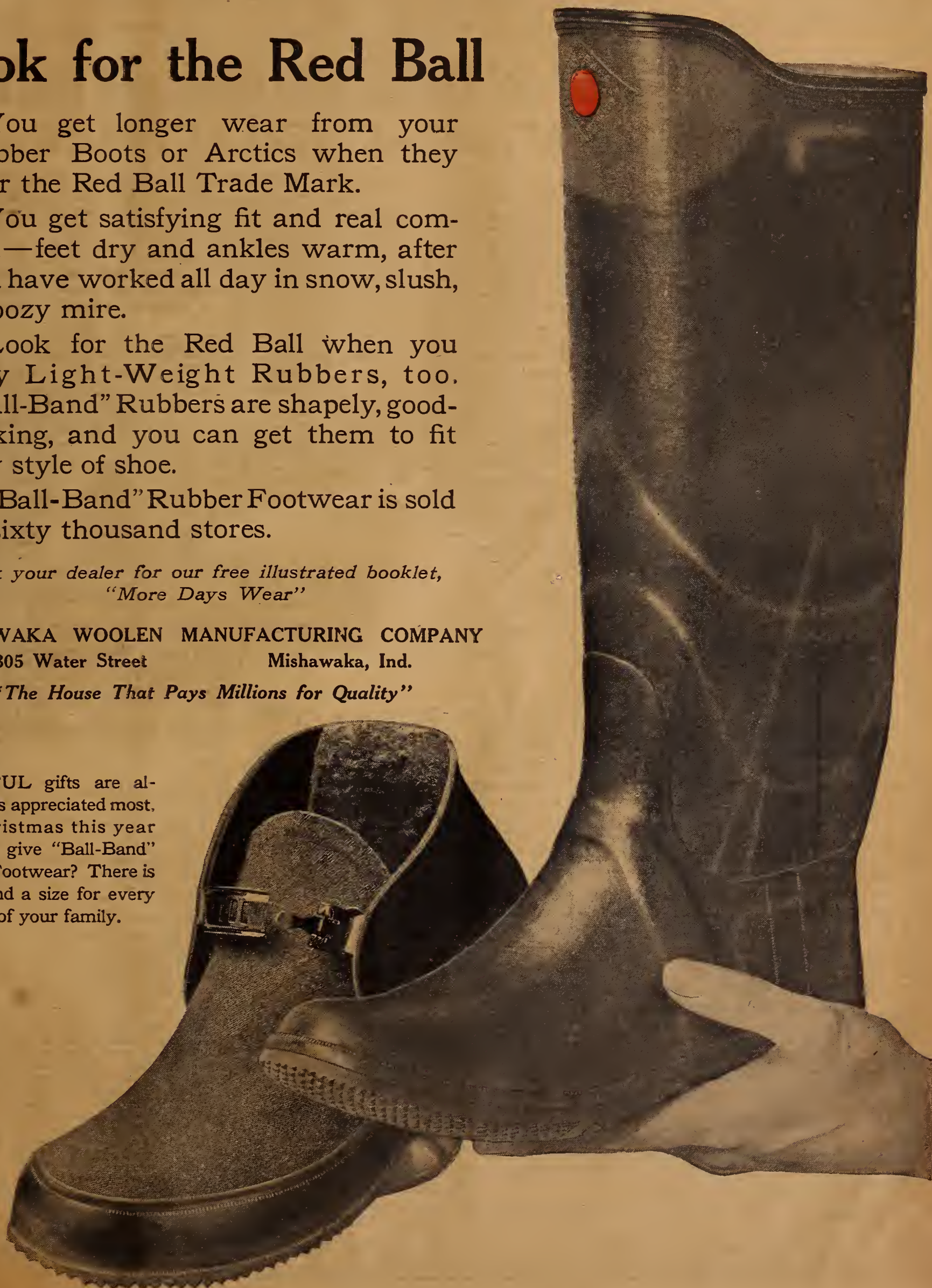
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Ask your dealer for our free illustrated booklet,
“More Days Wear”

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“The House That Pays Millions for Quality”

USEFUL gifts are always appreciated most. For Christmas this year why not give “Ball-Band” Rubber Footwear? There is a style and a size for every member of your family.



Glad Tidings for The Christmas Season

The Most Remarkable Magazine Offers of the Year BIG CASH SAVINGS—IF YOU ACT NOW!

HERE is a real opportunity for you to provide yourself and your family with your choice of the country's best magazines at remarkably reduced prices. *Farm and Fireside* is included in each combination for two years—24 splendid issues—the other magazines for one year each. Any one of the combinations listed on this page will bring to your home every month a splendid variety of good, clean, wholesome, interesting magazines that will interest and appeal and at the same time exert a wholesome influence. When the cost of any one of these combinations is compared with its

value, can you afford to deprive your home of this good literature?

We ask only that you make your choice and send in your order to-day. Our Subscription Service Department will gladly forward your order on to the other publishers, thus saving you the trouble and expense of writing each one direct. But place your order now so that we can enter your subscription to start with the big handsome Christmas issues which most publishers will put out this year. All offers good on renewals as well as new subscriptions, no matter how far your present subscription may be paid ahead.

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Farm and Fireside.....2 yrs. Poultry Keeper.....1 yr. Home and Friend.....1 yr. Household Guest.....1 yr. At regular rates \$2.10	\$1.35 You Save \$0.75	Farm and Fireside.....2 yrs. American Woman.....1 yr. Good Stories.....1 yr. The Household Guest.....1 yr. The Gentlewoman.....1 yr. At regular rates \$2.20	\$1.25 You Save \$0.95	Farm and Fireside.....2 yrs. Pathfinder.....1 yr. Farm and Home Mechanics.....1 yr. The Gentlewoman.....1 yr. At regular rates \$2.55	\$1.65 You Save \$0.90																																																				
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A Timely Christmas Gift Suggestion

Magazines as Christmas Gifts are increasing in popularity by leaps and bounds, and for a very good reason. A magazine subscription is something that your friends will appreciate not only during the Christmas season, but continuously throughout the year as the magazines are received. Our *Farm and Fireside* reader friends are not restricted to the purchase of one magazine combination for their own use. On the contrary, you have the privilege of purchasing as many combinations as you like as gifts for your friends. Simply write us, stating which combination you want sent and to whom, enclosing the necessary remittance, and we will do the rest.

*To get quick action
use this coupon*

FARM AND FIRESIDE, Springfield, Ohio F. F. 238

Gentlemen: I enclose \$.....for which send
Farm and Fireside 2 years, also the magazines below 1 year.

Name..... R. D. No.....

P. O..... State.....

List additional magazines here

1..... 2.....
3..... 4.....

Clubbing Number		Regular Price	With F. & F. 2 Yrs.
15	American Fruit Grower.....	\$1.00	\$1.25
50	American Magazine.....	2.50	3.20
7	American Woman.....	.50	1.00
35	Boys' Magazine.....	2.00	2.25
35	Christian Herald.....	2.00	2.25
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37	Modern Priscilla.....	2.00	2.20
20	Pathfinder.....	1.00	1.35
25	People's Home Journal.....	1.25	1.65
7	Poultry Keeper.....	.50	1.00
15	Today's Housewife.....	1.00	1.25
15	Thrice-a-Week World (N. Y.).....	1.00	1.35
8	Woman's World.....	.50	1.05
40	Woman's Home Companion.....	2.00	2.70
50	Youth's Companion.....	2.50	2.90

Many of our subscribers like our two-magazine offers best of all. So we want you to note particularly that you have the privilege of accepting any offer directly above at the special prices given. For instance, *Farm and Fireside* 2 years with *McCall's Magazine* 1 year cost you \$1.75. The regular price would be \$2.50, which means a saving of 75 cents. The other two-magazine offers are equally as attractive. But whichever offer on this page you accept, won't you please mail your order at once? We cannot guarantee prices beyond January 20th.

WINCHESTER

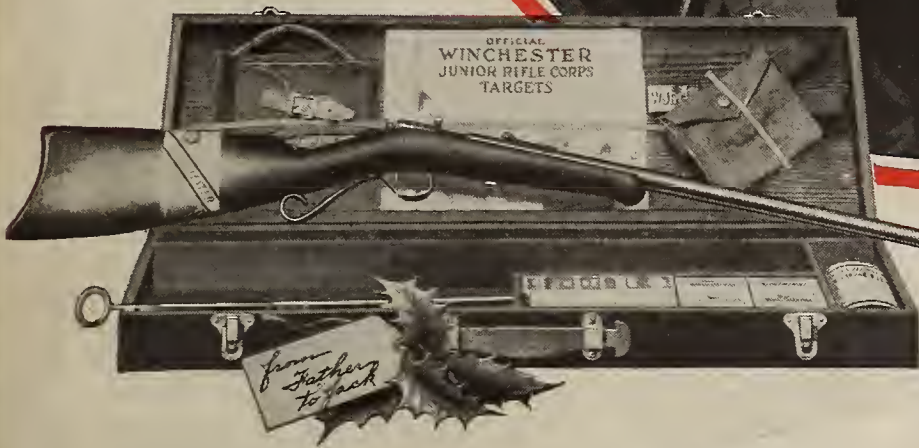
1866

1920

Winchester Junior Rifle Corps Range Kit contains a .22 caliber, Model 04 or 02 rifle, 200 rounds of ammunition, 50 official targets, cleaning preparations and rod, cartridge pouch, belt and gun case.



Winchester Junior Trap-shooting Outfit contains a Winchester .410 gauge shotgun, 4 boxes of shot shells, 100 small clay targets and hand trap. Cleaning preparations and rod.



Make this the best Christmas of all

DON'T you want to make this your boy's happiest Christmas—a day that he will date history from?

Don't you want to give your boy the thing he wants more than anything else in the world?

Here's the way to do it. You know he wants a gun. But you don't know how much he wants it. He can't tell you. It's beyond words.

To have a gun—not just a mere gun—a WINCHESTER—to be put on a level with Colonel Cody (Buffalo Bill) and Colonel Roosevelt and Admiral Peary—a real Winchester of his own—you simply can't imagine what it means to him!

Give him a Winchester Junior Rifle Corps Range Kit. Or, if he already has one, give him the Winchester Junior Trapshooting Outfit. Or better yet, give him both!

Both outfits are complete. The guns are genuine Winchester, the highest quality in the world. And there are gun cleaning tools and gun cleaning oil and grease, and ammunition and targets and gun-case and instructions—everything he needs to use them properly and take care of them right.

He will want to join the Winchester Junior Rifle Corps—your Winchester dealer will attend to that—if you haven't the time to teach him to shoot. But you'd better take the time, for you'll enjoy it as much as he does. Suppose you let him try both ways. Did you ever think of becoming a Winchester Junior Rifle Corps instructor yourself?

Go and talk to your Hardware or Sporting Goods dealer about it. That's what he's there for. Let him make your boy's happiest Christmas your happiest, too!

BELGIAN IMPORTED MELOTTE

HERE AGAIN

JULES MELOTTE—"The Edison of Europe"—has again placed his **GREAT BELGIAN MELOTTE CREAM SEPARATOR** on the American market to save money to the American farmer.

The great pre-war offer is continued. Free trial—small first payment—easy terms—duty free. So you, who have wanted the world's greatest separator, write for catalog now. Find out why 500,000 Melotte separators are in continuous use today. Read how in England, where every penny must be saved, there are more Belgian Melotte Cream Separators in use than all other makes combined.

Before buying any separator find out how the Melotte has won 264 Grand and International Prizes and how, for Efficiency of Skimming, Ease of Turning, Convenience of Operation and Durability—the Great Belgian Melotte has won every important European contest the last 16 years.

No wonder Jules Melotte says "Let every man try it. I'll leave it to the judgment of the American farmer as to whether this is the greatest separator in America." Mail coupon now for our great offer.

\$10.00
After 30 Days
Free Trial

by side. See for yourself which works easiest—which is most profitable—which operates at least expense—which is most sanitary and easiest to clean. Then send your skim milk to the creamery. Let them prove which separator skims the cleanest.

Easy Payments

Easiest to Clean

Few plain discs—all alike, go back in bowl in any order. Bowl chamber is

Porcelain Lined

Has smooth, rounded surface—no crevices. Easy to clean as a china plate. Can't rust. One-half less tinware to keep clean.

Easiest to Turn

We guarantee that the 600-lb. capacity Melotte turns easier than any other separator of 300-lb. capacity. Bowl spins 25 minutes after you stop cranking unless you apply brake. No other separator needs a brake.

You are not to send one cent until you have used this Great Belgian Melotte and have made up your mind it is the machine you want. Keep it for 30 days and use it just as if it were your own machine. Test the wonderful Melotte **SELF-BALANCING BOWL**—see why this bowl cannot vibrate nor get out of balance—why it cannot cause currents in the cream—why it cannot re-mix cream with milk.

Compare the Melotte separator with any other—test them side by side. See for yourself which works easiest—which is most profitable—which operates at least expense—which is most sanitary and easiest to clean. Then send your skim milk to the creamery. Let them prove which separator skims the cleanest.

After 30 days, when you are entirely convinced and satisfied that the Belgian Imported Melotte is, by far, the best cream separator to be found any place in the whole world—(a big statement, but true) send only the small sum of \$10.00. Then settle the balance in small monthly payments. The Melotte pays for itself from your increased cream checks. Mail the coupon now—today.

Send Coupon Valuable Books Free

In addition to the Melotte catalog, we will send you, *absolutely free*, "Profitable Dairying"—a practical, common-sense treatise, by two of America's foremost dairy experts, telling everything about dairying and how to make more money out of your cows. Get these valuable books *free*.

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U. S. Manager
Dept. 2589, 2843 West 19th Street, Chicago, Ill.

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Dept. 2589, 2843 W. 19th Street **Chicago**

Without cost to me or obligation in any way, please send me the valuable book "Profitable Dairying." Also the Melotte catalog which has the full story of this great Belgian Separator and M. Jules Melotte, its inventor.

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What U. S. Gov't Says

Vibration of a cream separator's bowl will soon cost you more money in cream waste than the price of your separator. U. S. Gov't Bulletin No. 201 says that a perfectly true motion of the bowl is *absolutely necessary*. The bowl is the vital part of any separator—the part where the cream separation takes place.

Self-Balancing Bowl

Jules Melotte—with his wonderful, patented *self-balancing* bowl—has solved the problem of perfect skimming. The Melotte is the *only* separator with a ball-bearing bowl-bearing. It *cannot* vibrate. It hangs down from a single ball-bearing and spins like a top. Can't get out of balance—can't cause currents in the cream—can't re-mix cream with milk. It is simple—durable—*Fool Proof*.

